



FCC PART 27  
FCC PART 90  
FCC PART 22H, PART 24E  
TEST REPORT

For

**Hytera Communications Corporation Limited**

Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen,  
518057 China

**FCC ID: YAMPDC760UXB2**

<b>Report Type:</b> Original Report	<b>Product Type:</b> Multi-mode Advanced Radio
<b>Report Number:</b>	RDG171226008-00D
<b>Report Date:</b>	2018-04-18
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## GENERAL INFORMATION

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

The *Hytera Communications Corporation Limited's* product, model number: PDC760 UxB2 (FCC ID: YAMPDC760UXB2) or the "EUT" in this report was a *Multi-mode Advanced Radio*, which was measured approximately: 24.0 cm (L) \* 7.0 cm (W) \* 2.5 cm (H), rated with input voltage: DC 7.6V battery or DC 12V from Adapter.

Adapter information:

Model: S024WM1200200.

Input: 100-240V~50/60Hz, 600mA Max.

Output: 12V, 2000mA

*\*All measurement and test data in this report was gathered from production sample serial number: 171226008. (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2017-12-26.*

### Objective

This test report is prepared on behalf of *Hytera Communications Corporation Limited* in accordance with Part 2-Subpart J, Part 22-Subpart H and Part 24-Subpart E and Part 27 and Part 90 of the Federal Communication Commissions rules.

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

### Related Submittal(s)/Grant(s)

Part 22&74&80&90 TNF, FCC Part 15.225 DXX and FCC Part 15.247 DTS/DSS submissions with FCC ID: YAMPDC760UXB2.

### Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2-Subpart 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

Part 90- PRIVATE LAND MOBILE RADIO SERVICES

Applicable Standards: ANSI C63.4-2014.

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

**Measurement Uncertainty**

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF output power, conducted		±1.5dB
Unwanted Emission, conducted		±1.5dB
Emissions, radiated	Below 1GHz	±4.70dB
	Above 1GHz	±4.80dB
Temperature		±1 °C
Supply voltages		±0.4%

**Test Facility**

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 342867, the FCC Designation No. : CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

## SYSTEM TEST CONFIGURATION

### Justification

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

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

### Equipment Modifications

No modifications were made to the EUT.

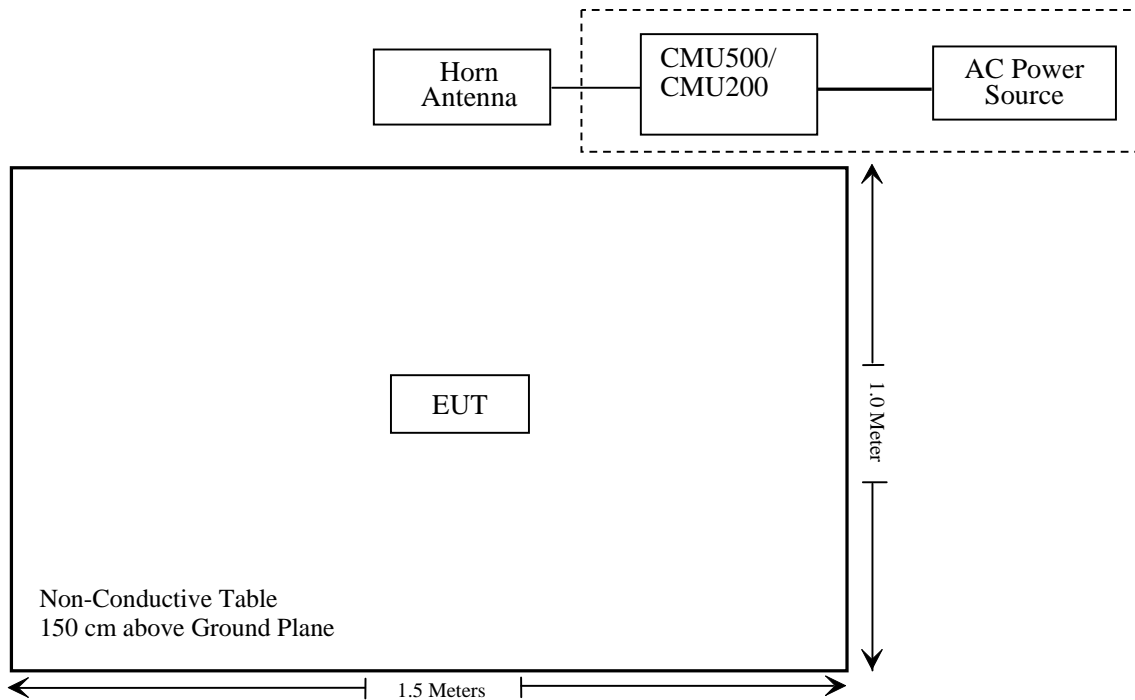
### Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	110605
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-116218-UY

### External I/O Cable

Cable Description	Length (m)	From/Port	To
Shielding Detachable RF Cable	0.5	EUT	Load

### Block Diagram of Test Setup



**SUMMARY OF TEST RESULTS**

FCC Rules	Description of Test	Result
§1.1307, §2.1093	RF Exposure (SAR)	Compliance
§2.1046; § 22.913 (a); § 24.232 (c); §27.50(b)(c)(d)(h); §90.635 (b)	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53; §90S	Occupied Bandwidth	Compliance
§ 2.1051; § 22.917 (a); § 24.238 (a); §27.53(c) (f) (g)(h)(m); §90.691	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53(c)(g)(h)(m); §90.691	Field Strength of Spurious Radiation	Compliance
§ 22.917 (a); § 24.238 (a); §27.53(c)(g)(h)(m); §90.691	Band Edge	Compliance
§ 2.1055; § 22.355; § 24.235; §27.54; §90.213	Frequency stability	Compliance

**TEST EQUIPMENT LIST**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
<b>Radiated Emission Test</b>					
Sunol Sciences	Horn Antenna	DRH-118	A052604	2017-12-29	2020-12-28
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2017-04-24	2018-04-24
Sunol Sciences	Bi-log Antenna	JB1	A040904-2	2017-12-17	2020-12-16
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2017-05-21	2018-05-21
HP	Amplifier	HP8447E	1937A01046	2017-11-19	2018-05-17
Anritsu	Signal Generator	68369B	004114	2017-12-05	2018-12-05
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2017-12-07	2018-12-07
COM POWER	Dipole Antenna	AD-100	041000	NCR	NCR
A.H. System	Horn Antenna	SAS-200/571	135	2015-08-18	2018-08-17
Ducommun technologies	RF Cable	UFA210A-1-4724-30050U	MFR64369 223410-001	2017-11-19	2018-05-17
Ducommun technologies	RF Cable	104PEA	218124002	2017-11-19	2018-05-17
Ducommun technologies	RF Cable	RG-214	1	2017-11-19	2018-05-17
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-04	2017-12-29	2020-12-28
Ducommun technologies	Horn Antenna	ARH-2823-02	1007726-03	2017-12-29	2020-12-28
Ducommun technologies	Pre-amplifier	ALN-22093530-01	991373-01	2017-08-03	2018-08-03
<b>RF Conducted Test</b>					
Rohde & Schwarz	SPECTRUM ANALYZER	FSU26	200120	2017-12-05	2018-12-05
ESPEC	Temperature & Humidity Chamber	EL-10KA	09107726	2017-11-22	2018-11-22
Fluke	Digital Multimeter	287	19000011	2017-04-09	2018-04-09
Fluke	Digital Multimeter	287	19000011	2018-04-09	2019-04-09
Changjiang	Contact Voltage Regulator	TDGC2-	N/A	NCR	NCR
Rohde & Schwarz	Wideband Radio Communication Tester	CMU200	106891	2017-10-18	2018-10-18
Rohde & Schwarz	Wideband Radio Communication tester	CMW500	1201.002K50-146520-wh	2017-04-24	2018-04-24
N/A	RF Notch filter	SKU 5G3	ATR0205-04-13	NCR	NCR
Ducommun technologies	RF Cable	RG-214	3	2017-11-22	2018-05-22
WEINSCHHEL	3dB Attenuator	N/A	N/A	2017-11-23	2018-05-22
N/A	Power Splitter	N/A	N/A	2017-05-21	2018-05-21



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

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## **FCC §1.1307 & §2.1093 - RF EXPOSURE**

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### **Applicable Standard**

FCC§1.1310 and §2.1093.

### **Test Result**

Compliance, please refer to the SAR report: RDG171226008-20.

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

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According to FCC § 2.1047(d), Part 22H, 24E & Part 27 & Part 90S there are no specific requirement for digital modulation, therefore modulation characteristic is not presented.

**FCC § 2.1046, § 22.913 (a) & § 24.232 (c); §27.50(b)(c)(d)(h); §90.635 (b) - 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 §27.50(b), Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

According to §27.50(c), 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 §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1755MHz.

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

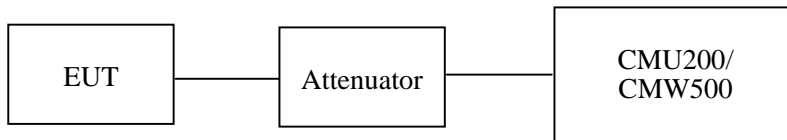
The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

According to §90.635(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

**Test Procedure**

*Conducted method:*

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



*Radiated method:*

TIA 603-D section 2.2.17

**Test Data**

**Environmental Conditions**

<b>Temperature:</b>	21~24 °C
<b>Relative Humidity:</b>	50~52 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Simon Wang on 2018-01-06 and 2018-04-18.*

**Conducted Power**

**Cellular Band (Part 22H)**

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
GSM	128	824.2	32.23	38.45
	190	836.6	32.24	38.45
	251	848.8	32.20	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	32.42	30.58	28.93	27.29	38.45
	190	836.6	32.39	30.49	28.79	27.17	38.45
	251	848.8	32.39	30.42	28.78	27.06	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	26.33	25.16	23.58	22.49	38.45
	190	836.6	26.19	24.97	23.48	22.37	38.45
	251	848.8	26.09	24.89	23.37	22.23	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
CDMA 1*RTT (BC0)	1013	824.70	22.86	38.45
	384	836.52	22.94	38.45
	777	848.31	22.87	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
CDMA EV-DO (BC0)	1013	824.70	23.22	38.45
	384	836.52	23.19	38.45
	777	848.31	23.18	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
			Low Frequency	Middle Frequency	High Frequency
WCDMA (Band V)	RMC		22.57	22.34	22.28
	HSDPA	1	21.37	21.18	21.01
		2	21.62	21.45	21.35
		3	21.74	21.66	21.50
		4	21.57	21.50	21.34
	HSUPA	1	20.76	20.60	20.50
		2	20.63	20.46	20.38
		3	20.74	20.68	20.55
		4	20.52	20.44	20.43
		5	20.76	20.68	20.58

**Part 90S**

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
CDMA 1*RTT (BC10)	450	817.25	22.88	50
	580	820.50	22.93	50
	670	822.75	22.91	50

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
CDMA EV-DO (BC10)	450	817.25	23.19	50
	580	820.50	23.17	50
	670	822.75	23.15	50

**PCS Band (Part 24E)**

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
GSM	512	1850.2	29.02	33
	661	1880.0	28.79	33
	810	1909.8	28.81	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	29.04	28.18	26.70	25.19	33
	661	1880.0	28.81	28.02	26.67	25.04	33
	810	1909.8	28.83	27.81	26.54	25.07	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	25.45	24.36	23.13	22.11	33
	661	1880.0	25.41	24.28	23.10	21.99	33
	810	1909.8	25.32	24.23	23.13	21.98	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
CDMA 1*RTT (BC1)	25	1851.25	22.85	33
	600	1880.00	22.92	33
	1175	1908.75	22.90	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
CDMA EV-DO (BC1)	25	1851.25	23.23	33
	600	1880.00	23.26	33
	1175	1908.75	23.27	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
			Low Frequency	Middle Frequency	High Frequency
WCDMA (Band II)	RMC		22.71	22.61	22.70
	HSDPA	1	21.03	20.80	21.00
		2	21.74	21.44	21.45
		3	21.86	21.64	21.53
		4	21.71	21.47	21.38
	HSUPA	1	20.54	20.26	20.35
		2	20.67	20.47	20.48
		3	20.74	20.54	20.55
		4	20.62	20.42	20.48
		5	20.76	20.59	20.63

**AWS Band (Part 27)**

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
			Low Frequency	Middle Frequency	High Frequency
WCDMA (Band IV)	RMC		22.07	22.16	22.15
	HSDPA	1	20.14	20.43	20.30
		2	20.74	20.44	20.45
		3	20.86	20.64	20.53
		4	20.71	20.47	20.38
	HSUPA	1	19.65	19.89	19.78
		2	19.67	19.47	19.48
		3	19.74	19.54	19.55
		4	19.62	19.42	19.48
		5	19.76	19.59	19.63



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

**Cellular Band**

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	10.23	13
	Middle	10.42	13
	High	10.15	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	10.14	13
	Middle	10.22	13
	High	10.20	13

Mode	Channel	PAR (dB)	Limit (dB)
CDMA 1*RTT (BC0)	Low	1.36	13
	Middle	1.30	13
	High	1.44	13

Mode	Channel	PAR (dB)	Limit (dB)
CDMA EV-DO (BC0)	Low	2.05	13
	Middle	2.07	13
	High	2.10	13

Mode	Channel	PAR (dB)	Limit (dB)
WCDMA (BPSK)	Low	3.24	13
	Middle	3.67	13
	High	3.73	13
HSDPA (16QAM)	Low	3.62	13
	Middle	3.75	13
	High	3.43	13
HSUPA (BPSK)	Low	3.23	13
	Middle	3.14	13
	High	3.21	13

**PCS Band**

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	11.15	13
	Middle	11.09	13
	High	11.32	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	10.11	13
	Middle	10.48	13
	High	10.17	13

Mode	Channel	PAR (dB)	Limit (dB)
CDMA 1*RTT (BC1)	Low	1.41	13
	Middle	1.45	13
	High	1.43	13

Mode	Channel	PAR (dB)	Limit (dB)
CDMA EV-DO (BC1)	Low	2.14	13
	Middle	2.12	13
	High	2.14	13

Mode	Channel	PAR (dB)	Limit (dB)
WCDMA (BPSK)	Low	4.43	13
	Middle	4.38	13
	High	4.46	13
HSDPA (16QAM)	Low	4.79	13
	Middle	4.68	13
	High	4.82	13
HSUPA (BPSK)	Low	4.76	13
	Middle	4.91	13
	High	4.86	13

**PCS Band (Part 27)**

<b>Mode</b>	<b>Channel</b>	<b>PAR (dB)</b>	<b>Limit (dB)</b>
WCDMA (BPSK)	Low	4.24	13
	Middle	4.66	13
	High	4.73	13
HSDPA (16QAM)	Low	4.62	13
	Middle	4.75	13
	High	4.43	13
HSUPA (BPSK)	Low	4.23	13
	Middle	4.14	13
	High	4.21	13

**Radiated Power**

**GSM Mode:**

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H/24E	
			Height (m)	Polar (H/V)	Level (dBm)	Cable loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
ERP for Cellular Band (Part 22H), Middle Channel										
836.6	101.16	282	1	H	31.2	0.67	0	30.53	38.45	7.92
836.6	99.87	128	2.4	V	29.9	0.67	0	29.23	38.45	9.22
EIRP for PCS Band (Part 24E), Middle Channel										
1880.00	88.54	41	1.1	H	18.5	1.30	8.50	25.70	33	7.30
1880.00	88.22	347	1.9	V	18.0	1.30	8.50	25.20	33	7.80

**EGRPS Mode:**

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H/24E	
			Height (m)	Polar (H/V)	Level (dBm)	Cable loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
ERP for Cellular Band (Part 22H), Middle Channel										
836.6	95.12	282	1	H	25.1	0.67	0	24.43	38.45	14.02
836.6	94.71	128	2.4	V	24.7	0.67	0	24.03	38.45	14.42
EIRP for PCS Band (Part 24E), Middle Channel										
1880.00	86.89	128	1.6	H	16.8	1.30	8.50	24.00	33	9.0
1880.00	84.16	33	2.1	V	13.9	1.30	8.50	21.10	33	11.9

**CDMA Mode:**

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	Level (dBm)	Cable loss (dB)	Antenna Gain (dB)			
ERP for CDMA (1*RTT , BC0)										
836.52	89.86	34	1.9	H	19.9	0.67	0	19.23	38.45	19.22
836.52	88.77	120	1.3	V	18.8	0.67	0	18.13	38.45	20.32
ERP for CDMA (1*RTT , BC1)										
1880.00	83.17	107	1.7	H	13.1	1.30	8.50	20.30	33	12.70
1880.00	83.62	152	1.5	V	13.4	1.30	8.50	20.60	33	12.40
ERP for CDMA (1*RTT , BC10)										
820.50	89.93	34	1.9	H	19.9	0.67	0	19.23	50	30.77
820.50	90.21	120	1.3	V	20.2	0.67	0	19.53	50	30.47
ERP for CDMA (EV-DO, BC0)										
836.52	90.12	34	1.9	H	20.1	0.67	0	19.43	38.45	19.02
836.52	89.24	120	1.3	V	19.2	0.67	0	18.53	38.45	19.92
ERP for CDMA (EV-DO, BC1)										
1880.00	83.52	264	2.3	H	13.5	1.30	8.50	20.70	33	12.30
1880.00	83.49	249	1.0	V	13.2	1.30	8.50	20.40	33	12.60
ERP for CDMA (EV-DO, BC10)										
820.50	90.19	34	1.9	H	20.2	0.67	0	19.53	50	30.47
820.50	89.91	120	1.3	V	19.9	0.67	0	19.23	50	30.77

**WCDMA Mode:**

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H/24E/27	
			Height (m)	Polar (H/V)	Level (dBm)	Cable loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
ERP for WCDMA Band V (Part 22H), Middle Channel										
836.6	93.24	282	1	H	23.2	0.67	0	22.53	38.45	15.92
836.6	95.15	128	2.4	V	25.2	0.67	0	24.53	38.45	13.92
EIRP for WCDMA Band II (Part 24E), Middle Channel										
1880.00	83.02	307	1.7	H	13.0	1.30	8.50	20.2	33	12.8
1880.00	82.95	174	1.3	V	12.7	1.30	8.50	19.9	33	13.1
EIRP for WCDMA Band IV (Part 27), Middle Channel										
1732.60	83.58	145	2.1	H	10.4	1.30	9.10	18.20	30	11.8
1732.60	84.27	88	1.4	V	11.7	1.30	9.10	19.50	30	10.5

**Note:**

All above data were tested with no amplifier.

Absolute Level = SG Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

**LTE Band 2**

**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.89	22.83	22.51
		RB Size=1, RB Offset=2	22.63	22.02	22.43
		RB Size=1, RB Offset=5	22.64	22.53	22.08
		RB Size=3, RB Offset=0	22.67	22.48	22.26
		RB Size=3, RB Offset=1	22.07	22.85	22.96
		RB Size=3, RB Offset=2	22.33	22.67	22.81
		RB Size=6, RB Offset=0	22.07	22.24	22.56
	16QAM	RB Size=1, RB Offset=0	22.14	22.67	22.89
		RB Size=1, RB Offset=2	22.61	22.85	22.94
		RB Size=1, RB Offset=5	21.02	21.66	21.25
		RB Size=3, RB Offset=0	21.53	21.37	21.84
		RB Size=3, RB Offset=1	21.25	21.55	21.73
		RB Size=3, RB Offset=2	21.34	21.73	21.55
		RB Size=6, RB Offset=0	21.83	21.04	21.09
3.0	QPSK	RB Size=1, RB Offset=0	22.82	22.77	22.83
		RB Size=1, RB Offset=7	22.79	22.62	22.71
		RB Size=1, RB Offset=14	22.54	22.60	22.77
		RB Size=8, RB Offset=0	21.83	21.87	21.99
		RB Size=8, RB Offset=4	21.70	21.67	21.72
		RB Size=8, RB Offset=7	21.52	21.51	21.73
		RB Size=15, RB Offset=0	21.78	21.70	21.79
	16QAM	RB Size=1, RB Offset=0	22.09	22.02	22.08
		RB Size=1, RB Offset=7	22.05	21.93	22.50
		RB Size=1, RB Offset=14	22.18	21.74	21.82
		RB Size=8, RB Offset=0	20.88	20.76	20.81
		RB Size=8, RB Offset=4	20.60	20.73	20.84
		RB Size=8, RB Offset=7	20.38	20.52	20.28
		RB Size=15, RB Offset=0	20.73	20.75	20.35

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.33	22.58	22.73
		RB Size=1, RB Offset=12	22.56	22.44	22.76
		RB Size=1, RB Offset=24	22.57	22.89	22.40
		RB Size=12, RB Offset=0	21.88	21.72	21.81
		RB Size=12, RB Offset=6	21.83	21.78	21.61
		RB Size=12, RB Offset=11	21.88	21.56	21.73
		RB Size=25, RB Offset=0	21.78	21.62	21.70
	16QAM	RB Size=1, RB Offset=0	21.91	21.53	21.67
		RB Size=1, RB Offset=12	21.72	21.30	21.37
		RB Size=1, RB Offset=24	21.82	21.33	21.83
		RB Size=12, RB Offset=0	20.76	20.54	20.25
		RB Size=12, RB Offset=6	20.36	20.62	20.69
		RB Size=12, RB Offset=11	20.58	20.40	20.26
		RB Size=25, RB Offset=0	20.70	20.18	20.79
10.0	QPSK	RB Size=1, RB Offset=0	22.19	22.77	22.60
		RB Size=1, RB Offset=24	22.71	22.29	22.69
		RB Size=1, RB Offset=49	22.20	22.88	22.53
		RB Size=25, RB Offset=0	21.71	21.43	21.31
		RB Size=25, RB Offset=12	21.72	21.68	21.23
		RB Size=25, RB Offset=24	21.80	21.58	21.63
		RB Size=50, RB Offset=0	21.83	21.59	21.67
	16QAM	RB Size=1, RB Offset=0	21.69	21.11	21.23
		RB Size=1, RB Offset=24	21.66	21.18	21.41
		RB Size=1, RB Offset=49	21.42	21.27	21.62
		RB Size=25, RB Offset=0	22.11	20.36	20.77
		RB Size=25, RB Offset=12	22.29	20.48	20.53
		RB Size=25, RB Offset=24	22.50	20.23	20.38
		RB Size=50, RB Offset=0	20.47	20.48	20.41

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15.0	QPSK	RB Size=1, RB Offset=0	22.10	22.05	22.34
		RB Size=1, RB Offset=37	22.00	21.92	22.18
		RB Size=1, RB Offset=74	22.01	21.99	22.19
		RB Size=36, RB Offset=0	22.01	21.98	22.01
		RB Size=36, RB Offset=18	22.03	21.94	21.88
		RB Size=36, RB Offset=37	22.10	21.66	21.59
		RB Size=75, RB Offset=0	21.87	21.88	21.99
	16QAM	RB Size=1, RB Offset=0	21.82	21.84	21.70
		RB Size=1, RB Offset=37	21.80	21.83	21.54
		RB Size=1, RB Offset=74	21.76	21.80	21.38
		RB Size=36, RB Offset=0	21.79	21.79	22.02
		RB Size=36, RB Offset=18	21.79	21.68	21.97
		RB Size=36, RB Offset=37	21.53	21.56	21.81
		RB Size=75, RB Offset=0	21.16	21.1	20.97
20.0	QPSK	RB Size=1, RB Offset=0	22.29	22.83	22.91
		RB Size=1, RB Offset=49	22.98	22.35	22.84
		RB Size=1, RB Offset=99	22.73	22.89	22.46
		RB Size=50, RB Offset=0	21.87	21.09	21.13
		RB Size=50, RB Offset=24	21.77	21.03	21.82
		RB Size=50, RB Offset=49	21.15	21.67	21.34
		RB Size=100, RB Offset=0	21.26	21.55	21.43
	16QAM	RB Size=1, RB Offset=0	22.07	21.94	22.24
		RB Size=1, RB Offset=49	21.63	21.82	21.06
		RB Size=1, RB Offset=99	21.87	21.37	21.82
		RB Size=50, RB Offset=0	20.49	20.54	20.90
		RB Size=50, RB Offset=24	20.25	20.82	20.46
		RB Size=50, RB Offset=49	20.42	20.61	20.37
		RB Size=100, RB Offset=0	20.78	20.57	20.71



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

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.78	13	Pass
QPSK (100RB Size)	4.37	13	Pass
16QAM (1RB Size)	5.61	13	Pass
16QAM (100RB Size)	5.58	13	Pass

**QPSK:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
1880.00	84.62	86	1.1	H	14.6	1.30	8.50	21.80	33
1880.00	84.49	28	1.0	V	14.2	1.30	8.50	21.40	33
3 MHz Bandwidth									
1880.00	84.68	86	1.9	H	14.6	1.30	8.50	21.80	33
1880.00	85.34	88	2.5	V	15.1	1.30	8.50	22.30	33
5 MHz Bandwidth									
1880.00	83.67	86	1.7	H	13.6	1.30	8.50	20.80	33
1880.00	85.52	1	2.0	V	15.3	1.30	8.50	22.50	33
10 MHz Bandwidth									
1880.00	84.73	86	1.7	H	14.7	1.30	8.50	21.90	33
1880.00	84.55	118	1.9	V	14.3	1.30	8.50	21.50	33
15 MHz Bandwidth									
1880.00	85.13	86	2.4	H	15.1	1.30	8.50	22.30	33
1880.00	84.67	180	1.7	V	14.4	1.30	8.50	21.60	33
20 MHz Bandwidth									
1880.00	84.38	86	1.9	H	14.3	1.30	8.50	21.50	33
1880.00	84.65	150	1.8	V	14.4	1.30	8.50	21.60	33

**16QAM:**

Frequency (MHz)	Receiver Reading (dBµV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
1880.00	84.83	10	1.7	H	14.8	1.30	8.50	22.00	33
1880.00	85.28	293	1.6	V	15.0	1.30	8.50	22.20	33
3 MHz Bandwidth									
1880.00	84.38	259	1.8	H	14.3	1.30	8.50	21.50	33
1880.00	85.16	47	2.0	V	14.9	1.30	8.50	22.10	33
5 MHz Bandwidth									
1880.00	83.84	274	2.0	H	13.8	1.30	8.50	21.00	33
1880.00	84.69	104	2.3	V	14.4	1.30	8.50	21.60	33
10 MHz Bandwidth									
1880.00	84.67	58	1.5	H	14.6	1.30	8.50	21.80	33
1880.00	84.37	184	2.2	V	14.1	1.30	8.50	21.30	33
15 MHz Bandwidth									
1880.00	85.47	36	2.0	H	15.4	1.30	8.50	22.60	33
1880.00	84.13	258	2.3	V	13.9	1.30	8.50	21.10	33
20 MHz Bandwidth									
1880.00	84.26	298	1.3	H	14.2	1.30	8.50	21.40	33
1880.00	83.34	158	1.9	V	13.1	1.30	8.50	20.30	33

**LTE Band 4:**

**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.67	22.38	22.54
		RB Size=1, RB Offset=2	22.31	22.58	22.48
		RB Size=1, RB Offset=5	22.35	22.16	22.25
		RB Size=3, RB Offset=0	22.05	22.48	22.93
		RB Size=3, RB Offset=1	22.53	22.67	22.43
		RB Size=3, RB Offset=2	22.17	22.49	22.85
		RB Size=6, RB Offset=0	21.08	21.53	21.69
	16QAM	RB Size=1, RB Offset=0	21.25	21.46	21.38
		RB Size=1, RB Offset=2	21.53	21.86	21.76
		RB Size=1, RB Offset=5	21.44	21.53	21.43
		RB Size=3, RB Offset=0	22.33	21.82	21.12
		RB Size=3, RB Offset=1	22.56	21.08	21.30
		RB Size=3, RB Offset=2	22.18	21.83	21.43
		RB Size=6, RB Offset=0	20.18	20.69	20.74
3.0	QPSK	RB Size=1, RB Offset=0	22.95	22.53	22.43
		RB Size=1, RB Offset=7	22.35	22.16	22.09
		RB Size=1, RB Offset=14	22.85	22.47	22.18
		RB Size=8, RB Offset=0	21.06	21.36	21.53
		RB Size=8, RB Offset=4	21.45	21.75	21.48
		RB Size=8, RB Offset=7	21.21	21.49	21.04
		RB Size=15, RB Offset=0	21.35	21.37	21.38
	16QAM	RB Size=1, RB Offset=0	21.96	21.46	21.68
		RB Size=1, RB Offset=7	21.56	21.32	21.49
		RB Size=1, RB Offset=14	21.75	21.08	21.57
		RB Size=8, RB Offset=0	20.13	20.46	20.19
		RB Size=8, RB Offset=4	20.48	20.55	20.69
		RB Size=8, RB Offset=7	20.39	20.34	20.73
		RB Size=15, RB Offset=0	20.75	20.17	20.47

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.58	22.05	22.75
		RB Size=1, RB Offset=12	22.64	22.19	22.82
		RB Size=1, RB Offset=24	22.38	22.36	22.13
		RB Size=12, RB Offset=0	21.08	21.58	21.55
		RB Size=12, RB Offset=6	21.36	21.33	21.43
		RB Size=12, RB Offset=11	21.59	21.42	21.08
		RB Size=25, RB Offset=0	21.48	21.18	21.76
	16QAM	RB Size=1, RB Offset=0	21.62	21.95	21.93
		RB Size=1, RB Offset=12	21.05	21.76	21.48
		RB Size=1, RB Offset=24	21.04	21.58	21.67
		RB Size=12, RB Offset=0	20.13	20.58	20.17
		RB Size=12, RB Offset=6	20.14	20.48	20.59
		RB Size=12, RB Offset=11	20.57	20.55	20.37
		RB Size=25, RB Offset=0	20.49	20.33	20.69
10.0	QPSK	RB Size=1, RB Offset=0	22.66	22.42	22.25
		RB Size=1, RB Offset=24	22.59	22.65	22.33
		RB Size=1, RB Offset=49	22.48	22.47	22.05
		RB Size=25, RB Offset=0	21.47	21.44	21..57
		RB Size=25, RB Offset=12	21.38	21.56	21.23
		RB Size=25, RB Offset=24	21.08	21.44	21.27
		RB Size=50, RB Offset=0	21.24	21.08	21.46
	16QAM	RB Size=1, RB Offset=0	22.74	22.47	22.84
		RB Size=1, RB Offset=24	22.55	22.18	22.39
		RB Size=1, RB Offset=49	22.10	22.09	22.41
		RB Size=25, RB Offset=0	20.47	20.96	20.18
		RB Size=25, RB Offset=12	20.15	20.38	20.38
		RB Size=25, RB Offset=24	20.34	20.48	20.54
		RB Size=50, RB Offset=0	20.69	20.64	20.46

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15.0	QPSK	RB Size=1, RB Offset=0	22.69	22.36	22.24
		RB Size=1, RB Offset=37	22.18	22.28	22.63
		RB Size=1, RB Offset=74	22.56	22.76	22.48
		RB Size=36, RB Offset=0	21.35	21.47	21.08
		RB Size=36, RB Offset=18	21.57	21.55	21.69
		RB Size=36, RB Offset=37	21.86	21.69	21.32
		RB Size=75, RB Offset=0	21.44	21.76	21.05
	16QAM	RB Size=1, RB Offset=0	21.58	21.48	21.16
		RB Size=1, RB Offset=37	21.63	21.57	21.47
		RB Size=1, RB Offset=74	21.79	21.39	21.75
		RB Size=36, RB Offset=0	20.18	20.49	20.86
		RB Size=36, RB Offset=18	20.52	20.47	20.75
		RB Size=36, RB Offset=37	20.18	20.33	20.58
		RB Size=75, RB Offset=0	20.22	20.56	22.52
20.0	QPSK	RB Size=1, RB Offset=0	22.58	22.34	22.69
		RB Size=1, RB Offset=49	22.35	22.28	22.58
		RB Size=1, RB Offset=99	22.49	22.37	22.47
		RB Size=50, RB Offset=0	21.75	21.35	21.21
		RB Size=50, RB Offset=24	21.15	21.43	21.80
		RB Size=50, RB Offset=49	21.63	21.82	21.14
		RB Size=100, RB Offset=0	21.04	21.75	21.43
	16QAM	RB Size=1, RB Offset=0	22.22	22.56	22.36
		RB Size=1, RB Offset=49	22.41	22.12	22.79
		RB Size=1, RB Offset=99	21.38	22.31	22.36
		RB Size=50, RB Offset=0	21.09	20.90	21.51
		RB Size=50, RB Offset=24	20.75	20.27	20.29
		RB Size=50, RB Offset=49	20.70	20.98	20.66
		RB Size=100, RB Offset=0	20.64	20.35	20.37

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

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.64	13	Pass
QPSK (100RB Size)	4.53	13	Pass
16QAM (1RB Size)	5.78	13	Pass
16QAM (100RB Size)	5.62	13	Pass

**QPSK:**

Frequency (MHz)	Receiver Reading (dBµV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
1732.50	86.57	86	2.1	H	13.4	1.30	9.10	21.20	30
1732.50	84.21	320	1.9	V	11.6	1.30	9.10	19.40	30
3 MHz Bandwidth									
1732.50	85.69	86	1.6	H	12.5	1.30	9.10	20.30	30
1732.50	84.72	334	1.0	V	12.2	1.30	9.10	20.00	30
5 MHz Bandwidth									
1732.50	86.36	86	1.4	H	13.2	1.30	9.10	21.00	30
1732.50	85.21	32	2.2	V	12.6	1.30	9.10	20.40	30
10 MHz Bandwidth									
1732.50	86.76	86	2.2	H	13.6	1.30	9.10	21.40	30
1732.50	85.64	144	1.4	V	13.1	1.30	9.10	20.90	30
15 MHz Bandwidth									
1732.50	85.83	86	2.5	H	12.7	1.30	9.10	20.50	30
1732.50	84.67	314	2.2	V	12.1	1.30	9.10	19.90	30
20 MHz Bandwidth									
1732.50	85.46	86	1.5	H	12.3	1.30	9.10	20.10	30
1732.50	84.51	60	1.8	V	11.9	1.30	9.10	19.70	30

**16QAM:**

Frequency (MHz)	Receiver Reading (dBµV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
1732.50	86.36	3	1.4	H	13.2	1.30	9.10	21.00	30
1732.50	84.13	290	2.4	V	11.6	1.30	9.10	19.40	30
3 MHz Bandwidth									
1732.50	85.68	86	1.4	H	12.5	1.30	9.10	20.30	30
1732.50	84.73	203	1.3	V	12.2	1.30	9.10	20.00	30
5 MHz Bandwidth									
1732.50	86.13	86	2.0	H	13.0	1.30	9.10	20.80	30
1732.50	84.94	99	1.6	V	12.4	1.30	9.10	20.20	30
10 MHz Bandwidth									
1732.50	86.55	172	1.1	H	13.4	1.30	9.10	21.20	30
1732.50	85.36	10	1.0	V	12.8	1.30	9.10	20.60	30
15 MHz Bandwidth									
1732.50	86.55	172	1.1	H	13.4	1.30	9.10	21.20	30
1732.50	85.36	10	1.0	V	12.8	1.30	9.10	20.60	30
20 MHz Bandwidth									
1732.50	85.78	89	1.3	H	12.6	1.30	9.10	20.40	30
1732.50	85.36	344	2.3	V	12.8	1.30	9.10	20.60	30

**LTE Band 5:**

**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.58	22.52	22.52
		RB Size=1, RB Offset=2	22.68	22.64	22.68
		RB Size=1, RB Offset=5	22.63	22.61	22.73
		RB Size=3, RB Offset=0	22.59	22.56	22.61
		RB Size=3, RB Offset=1	22.58	22.57	22.56
		RB Size=3, RB Offset=2	22.60	22.72	22.67
		RB Size=6, RB Offset=0	22.61	22.67	22.66
	16QAM	RB Size=1, RB Offset=0	22.36	22.30	22.45
		RB Size=1, RB Offset=2	22.52	22.57	22.38
		RB Size=1, RB Offset=5	21.69	21.66	21.73
		RB Size=3, RB Offset=0	21.74	21.75	21.77
		RB Size=3, RB Offset=1	21.72	21.79	21.57
		RB Size=3, RB Offset=2	21.65	21.63	21.47
		RB Size=6, RB Offset=0	21.52	21.48	21.59
3.0	QPSK	RB Size=1, RB Offset=0	22.67	22.65	22.8
		RB Size=1, RB Offset=7	22.52	22.32	22.64
		RB Size=1, RB Offset=14	22.57	22.66	22.44
		RB Size=8, RB Offset=0	21.63	21.73	21.58
		RB Size=8, RB Offset=4	21.71	21.86	21.26
		RB Size=8, RB Offset=7	21.71	21.65	21.79
		RB Size=15, RB Offset=0	21.68	21.73	21.64
	16QAM	RB Size=1, RB Offset=0	22.37	22.27	22.44
		RB Size=1, RB Offset=7	22.32	22.34	22.19
		RB Size=1, RB Offset=14	21.48	21.39	21.63
		RB Size=8, RB Offset=0	20.61	20.55	20.48
		RB Size=8, RB Offset=4	20.59	20.52	20.72
		RB Size=8, RB Offset=7	20.49	20.24	20.45
		RB Size=15, RB Offset=0	20.50	20.19	20.47



Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.34	22.55	22.22
		RB Size=1, RB Offset=12	22.46	22.48	22.59
		RB Size=1, RB Offset=24	22.42	22.41	22.36
		RB Size=12, RB Offset=0	21.59	21.58	21.55
		RB Size=12, RB Offset=6	21.15	21.54	21.28
		RB Size=12, RB Offset=11	21.46	21.63	21.44
		RB Size=25, RB Offset=0	21.31	21.17	21.27
	16QAM	RB Size=1, RB Offset=0	21.21	21.03	21.29
		RB Size=1, RB Offset=12	21.23	21.31	21.67
		RB Size=1, RB Offset=24	21.33	21.28	21.31
		RB Size=12, RB Offset=0	20.25	20.24	20.21
		RB Size=12, RB Offset=6	20.37	20.45	20.43
		RB Size=12, RB Offset=11	20.28	20.37	20.33
		RB Size=25, RB Offset=0	20.18	20.23	20.14
10.0	QPSK	RB Size=1, RB Offset=0	22.38	22.47	22.35
		RB Size=1, RB Offset=24	22.09	22.44	22.51
		RB Size=1, RB Offset=49	22.34	22.35	22.23
		RB Size=25, RB Offset=0	21.53	21.54	21.26
		RB Size=25, RB Offset=12	21.38	21.19	21.21
		RB Size=25, RB Offset=24	21.56	21.26	21.37
		RB Size=50, RB Offset=0	21.53	21.35	21.51
	16QAM	RB Size=1, RB Offset=0	21.66	21.08	21.63
		RB Size=1, RB Offset=24	21.76	21.81	21.69
		RB Size=1, RB Offset=49	21.73	21.84	21.79
		RB Size=25, RB Offset=0	22.51	20.48	20.42
		RB Size=25, RB Offset=12	22.24	20.34	20.47
		RB Size=25, RB Offset=24	22.37	20.39	20.59
		RB Size=50, RB Offset=0	20.28	20.17	20.34

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

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.09	13	Pass
QPSK (50RB Size)	4.35	13	Pass
16QAM (1RB Size)	5.01	13	Pass
16QAM (50RB Size)	4.93	13	Pass

**QPSK:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
836.5	91.45	24	1.5	H	21.5	0.67	0	20.83	38.45
836.5	90.9	36	1.8	V	20.9	0.67	0	20.23	38.45
3 MHz Bandwidth									
836.5	91.24	14	1.5	H	21.2	0.67	0	20.53	38.45
836.5	90.67	93	1.8	V	20.7	0.67	0	20.03	38.45
5 MHz Bandwidth									
836.5	90.53	12	1.2	H	20.5	0.67	0	19.83	38.45
836.5	91.02	45	1.5	V	21	0.67	0	20.33	38.45
10 MHz Bandwidth									
836.5	89.98	256	1.1	H	20	0.67	0	19.33	38.45
836.5	89.63	187	1.9	V	19.6	0.67	0	18.93	38.45

**16QAM:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
836.5	91.74	107	1.5	H	21.7	0.67	0	21.03	38.45
836.5	90.89	241	1.8	V	20.9	0.67	0	20.23	38.45
3 MHz Bandwidth									
836.5	91.58	75	1.5	H	21.6	0.67	0	20.93	38.45
836.5	90.79	65	1.8	V	20.8	0.67	0	20.13	38.45
5 MHz Bandwidth									
836.5	91.31	47	1.2	H	21.3	0.67	0	20.63	38.45
836.5	90.47	96	1.3	V	20.5	0.67	0	19.83	38.45
10 MHz Bandwidth									
836.5	91.06	314	1.0	H	21.1	0.67	0	20.43	38.45
836.5	90.2	205	1.2	V	20.2	0.67	0	19.53	38.45

**LTE Band 7**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.62	22.28	22.59
		RB Size=1, RB Offset=12	22.50	22.57	22.63
		RB Size=1, RB Offset=24	22.67	22.84	22.78
		RB Size=12, RB Offset=0	21.69	21.68	21.74
		RB Size=12, RB Offset=6	21.75	21.86	21.34
		RB Size=12, RB Offset=11	21.71	21.69	21.08
		RB Size=25, RB Offset=0	21.63	21.57	21.61
	16QAM	RB Size=1, RB Offset=0	22.39	21.65	22.73
		RB Size=1, RB Offset=12	22.56	21.68	22.67
		RB Size=1, RB Offset=24	22.71	21.47	22.45
		RB Size=12, RB Offset=0	21.53	20.53	21.51
		RB Size=12, RB Offset=6	21.54	21.81	21.66
		RB Size=12, RB Offset=11	21.55	20.07	21.48
		RB Size=25, RB Offset=0	21.06	20.61	20.37
10.0	QPSK	RB Size=1, RB Offset=0	22.60	22.37	22.78
		RB Size=1, RB Offset=24	22.70	22.31	22.60
		RB Size=1, RB Offset=49	22.55	22.23	22.73
		RB Size=25, RB Offset=0	21.82	21.58	22.04
		RB Size=25, RB Offset=12	21.84	21.74	21.95
		RB Size=25, RB Offset=24	21.77	21.71	22.02
		RB Size=50, RB Offset=0	21.98	21.42	21.49
	16QAM	RB Size=1, RB Offset=0	21.81	22.00	21.91
		RB Size=1, RB Offset=24	21.67	22.14	21.93
		RB Size=1, RB Offset=49	21.74	22.20	21.95
		RB Size=25, RB Offset=0	20.99	21.18	21.20
		RB Size=25, RB Offset=12	21.12	21.09	21.01
		RB Size=25, RB Offset=24	21.01	21.26	21.20
		RB Size=50, RB Offset=0	21.08	20.51	20.61

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15.0	QPSK	RB Size=1, RB Offset=0	22.34	22.34	22.28
		RB Size=1, RB Offset=37	22.21	22.39	22.26
		RB Size=1, RB Offset=74	22.12	22.49	22.05
		RB Size=36, RB Offset=0	21.67	21.71	21.63
		RB Size=36, RB Offset=18	21.81	21.89	21.90
		RB Size=36, RB Offset=37	22.33	22.24	22.31
		RB Size=75, RB Offset=0	22.31	22.23	22.38
	16QAM	RB Size=1, RB Offset=0	21.83	21.93	21.96
		RB Size=1, RB Offset=37	21.78	21.85	21.73
		RB Size=1, RB Offset=74	21.23	21.25	21.14
		RB Size=36, RB Offset=0	21.34	21.53	21.87
		RB Size=36, RB Offset=18	21.23	21.38	21.52
		RB Size=36, RB Offset=37	21.43	21.21	21.61
		RB Size=75, RB Offset=0	20.28	20.86	21.57
20.0	QPSK	RB Size=1, RB Offset=0	22.57	22.58	22.63
		RB Size=1, RB Offset=49	22.48	22.59	22.74
		RB Size=1, RB Offset=99	22.47	22.39	22.43
		RB Size=50, RB Offset=0	21.07	22.37	22.77
		RB Size=50, RB Offset=24	22.08	22.53	22.54
		RB Size=50, RB Offset=49	21.28	22.27	22.27
		RB Size=100, RB Offset=0	22.11	21.92	22.44
	16QAM	RB Size=1, RB Offset=0	22.24	22.23	22.30
		RB Size=1, RB Offset=49	21.97	22.26	22.54
		RB Size=1, RB Offset=99	22.36	22.63	22.70
		RB Size=50, RB Offset=0	21.07	21.37	22.53
		RB Size=50, RB Offset=24	21.38	21.52	22.42
		RB Size=50, RB Offset=49	21.12	21.30	21.88
		RB Size=100, RB Offset=0	21.82	20.21	21.73

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

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.98	13	Pass
QPSK (100RB Size)	4.39	13	Pass
16QAM (1RB Size)	5.83	13	Pass
16QAM (100RB Size)	5.64	13	Pass

**EIRP:**

**QPSK:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
5 MHz Bandwidth									
2535.00	78.26	86	1.1	H	8.8	2.60	9.30	15.50	33
2535.00	81.35	79	2.3	V	12.5	2.60	9.30	19.20	33
10 MHz Bandwidth									
2535.00	78.69	86	1.3	H	9.2	2.60	9.30	15.90	33
2535.00	81.34	345	2.3	V	12.5	2.60	9.30	19.20	33
15 MHz Bandwidth									
2535.00	78.65	86	2.4	H	9.2	2.60	9.30	15.90	33
2535.00	82.11	208	1.9	V	13.2	2.60	9.30	19.90	33
20 MHz Bandwidth									
2535.00	77.94	86	2.1	H	8.5	2.60	9.30	15.20	33
2535.00	81.23	89	2.1	V	12.4	2.60	9.30	19.10	33

**16QAM:**

Frequency (MHz)	Receiver Reading (dBµV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
5 MHz Bandwidth									
2535.00	77.35	84	1.0	H	7.9	2.60	9.30	14.60	33
2535.00	81.18	55	2.5	V	12.3	2.60	9.30	19.00	33
10 MHz Bandwidth									
2535.00	78.05	127	1.6	H	8.6	2.60	9.30	15.30	33
2535.00	81.92	120	1.4	V	13.0	2.60	9.30	19.70	33
15 MHz Bandwidth									
2535.00	78.65	86	1.4	H	9.2	2.60	9.30	15.90	33
2535.00	82.13	29	2.0	V	13.3	2.60	9.30	20.00	33
20 MHz Bandwidth									
2535.00	78.86	86	1.9	H	9.4	2.60	9.30	16.10	33
2535.00	81.55	49	2.4	V	12.7	2.60	9.30	19.40	33

**LTE Band12:**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.67	22.54	22.73
		RB Size=1, RB Offset=2	22.66	22.55	22.53
		RB Size=1, RB Offset=5	22.54	22.67	22.83
		RB Size=3, RB Offset=0	22.46	22.98	22.42
		RB Size=3, RB Offset=1	22.36	22.24	22.27
		RB Size=3, RB Offset=2	22.44	22.35	22.52
		RB Size=6, RB Offset=0	22.48	22.28	22.47
	16QAM	RB Size=1, RB Offset=0	22.27	22.46	22.45
		RB Size=1, RB Offset=2	22.38	22.07	21.33
		RB Size=1, RB Offset=5	21.08	21.05	21.14
		RB Size=3, RB Offset=0	21.03	21.34	21.01
		RB Size=3, RB Offset=1	20.99	21.67	21.96
		RB Size=3, RB Offset=2	20.87	20.96	20.75
		RB Size=6, RB Offset=0	20.83	20.77	20.57
3	QPSK	RB Size=1, RB Offset=0	22.45	22.41	22.67
		RB Size=1, RB Offset=7	22.44	22.85	22.35
		RB Size=1, RB Offset=14	22.38	22.37	22.43
		RB Size=8, RB Offset=0	21.66	21.73	21.67
		RB Size=8, RB Offset=4	21.84	21.27	21.69
		RB Size=8, RB Offset=7	21.75	21.64	21.76
		RB Size=15, RB Offset=0	21.43	21.72	21.34
	16QAM	RB Size=1, RB Offset=0	22.67	22.69	22.79
		RB Size=1, RB Offset=7	22.61	22.72	22.55
		RB Size=1, RB Offset=14	22.54	22.37	22.28
		RB Size=8, RB Offset=0	20.86	20.88	20.82
		RB Size=8, RB Offset=4	20.24	20.91	20.68
		RB Size=8, RB Offset=7	20.78	20.87	20.97
		RB Size=15, RB Offset=0	20.63	20.71	20.53



Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5	QPSK	RB Size=1, RB Offset=0	22.23	22.68	22.81
		RB Size=1, RB Offset=12	22.72	22.79	22.62
		RB Size=1, RB Offset=24	22.56	22.88	22.47
		RB Size=12, RB Offset=0	21.59	21.6	21.73
		RB Size=12, RB Offset=6	21.62	21.82	21.65
		RB Size=12, RB Offset=11	21.72	21.62	21.85
		RB Size=25, RB Offset=0	21.75	21.74	21.77
	16QAM	RB Size=1, RB Offset=0	21.73	21.91	21.88
		RB Size=1, RB Offset=12	21.64	21.44	21.67
		RB Size=1, RB Offset=24	21.63	21.87	21.66
		RB Size=12, RB Offset=0	20.61	20.57	20.51
		RB Size=12, RB Offset=6	20.47	20.43	20.38
		RB Size=12, RB Offset=11	20.35	20.76	20.54
		RB Size=25, RB Offset=0	20.46	20.69	20.45
10	QPSK	RB Size=1, RB Offset=0	22.63	22.57	22.68
		RB Size=1, RB Offset=24	22.56	22.46	22.44
		RB Size=1, RB Offset=49	22.58	22.73	22.41
		RB Size=25, RB Offset=0	21.53	21.49	21.49
		RB Size=25, RB Offset=12	21.46	21.45	21.45
		RB Size=25, RB Offset=24	21.48	21.49	21.34
		RB Size=50, RB Offset=0	21.49	21.55	21.38
	16QAM	RB Size=1, RB Offset=0	21.54	21.35	21.49
		RB Size=1, RB Offset=24	21.56	21.38	21.62
		RB Size=1, RB Offset=49	21.52	21.41	21.42
		RB Size=25, RB Offset=0	22.58	20.78	20.69
		RB Size=25, RB Offset=12	22.19	20.75	20.83
		RB Size=25, RB Offset=24	22.52	20.73	20.75
		RB Size=50, RB Offset=0	20.37	20.72	20.28

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

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.52	13	Pass
QPSK (50RB Size)	4.31	13	Pass
16QAM (1RB Size)	5.26	13	Pass
16QAM (50RB Size)	5.48	13	Pass

**EIRP:**

**QPSK:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
707.5	91.17	140	1.0	H	21.7	0.62	0	21.08	34.77
707.5	90.78	42	1.0	V	21.3	0.62	0	20.68	34.77
3 MHz Bandwidth									
707.5	90.96	211	1.1	H	21.5	0.62	0	20.88	34.77
707.5	91.01	48	1.3	V	21.5	0.62	0	20.88	34.77
5 MHz Bandwidth									
707.5	90.76	54	1.3	H	21.3	0.62	0	20.68	34.77
707.5	90.85	63	1.3	V	21.4	0.62	0	20.78	34.77
10 MHz Bandwidth									
707.5	90.54	201	1.9	H	21	0.62	0	20.38	34.77
707.5	90.33	58	1.3	V	20.8	0.62	0	20.18	34.77

**16QAM:**

Frequency (MHz)	Receiver Reading (dBµV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
707.5	92.01	104	1.1	H	22.5	0.62	0	21.88	34.77
707.5	91.58	8	1.6	V	22.1	0.62	0	21.48	34.77
3 MHz Bandwidth									
707.5	91.88	263	1.4	H	22.4	0.62	0	21.78	34.77
707.5	91.45	14	1.4	V	22	0.62	0	21.38	34.77
5 MHz Bandwidth									
707.5	91.75	150	1.7	H	22.3	0.62	0	21.68	34.77
707.5	91.28	63	1.6	V	21.8	0.62	0	21.18	34.77
10 MHz Bandwidth									
707.5	91.46	42	1.5	H	22	0.62	0	21.38	34.77
707.5	91.12	23	1.7	V	21.6	0.62	0	20.98	34.77

**LTE Band 13:**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5	QPSK	RB Size=1, RB Offset=0	22.36	22.36	22.35
		RB Size=1, RB Offset=12	22.27	22.52	22.24
		RB Size=1, RB Offset=24	22.21	22.26	22.11
		RB Size=12, RB Offset=0	21.48	21.58	21.45
		RB Size=12, RB Offset=6	21.4	21.6	21.83
		RB Size=12, RB Offset=11	21.46	21.38	21.58
		RB Size=25, RB Offset=0	21.58	21.69	21.42
	16QAM	RB Size=1, RB Offset=0	21.47	21.34	21.45
		RB Size=1, RB Offset=12	21.45	21.31	21.34
		RB Size=1, RB Offset=24	21.46	21.38	21.37
		RB Size=12, RB Offset=0	20.56	20.69	20.52
		RB Size=12, RB Offset=6	20.54	20.46	20.58
		RB Size=12, RB Offset=11	20.61	20.49	20.74
		RB Size=25, RB Offset=0	20.52	20.53	20.56
10	QPSK	RB Size=1, RB Offset=0	22.86	22.82	23.07
		RB Size=1, RB Offset=24	22.45	22.87	22.35
		RB Size=1, RB Offset=49	22.53	22.62	22.45
		RB Size=25, RB Offset=0	21.38	21.48	20.95
		RB Size=25, RB Offset=12	21.33	21.77	21.69
		RB Size=25, RB Offset=24	21.62	21.49	21.2
		RB Size=50, RB Offset=0	21.22	21.26	21.19
	16QAM	RB Size=1, RB Offset=0	21.23	21.18	21.33
		RB Size=1, RB Offset=24	21.28	21.37	20.08
		RB Size=1, RB Offset=49	20.56	20.76	20.60
		RB Size=25, RB Offset=0	22.61	20.66	20.73
		RB Size=25, RB Offset=12	22.07	20.66	20.25
		RB Size=25, RB Offset=24	22.53	20.36	20.07
		RB Size=50, RB Offset=0	20.27	20.13	20.61

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

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.36	13	Pass
QPSK (50RB Size)	4.85	13	Pass
16QAM (1RB Size)	5.23	13	Pass
16QAM (50RB Size)	5.36	13	Pass

**EIRP:**

**QPSK:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
5 MHz Bandwidth									
782	90.54	96	1.2	H	21	0.65	0	20.38	34.77
782	90.33	108	1.3	V	20.8	0.65	0	20.18	34.77
10 MHz Bandwidth									
782	91.36	220	1.8	H	21.4	0.65	0	20.75	34.77
782	91.2	13	1.7	V	21.2	0.65	0	20.55	34.77

**16QAM:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
5 MHz Bandwidth									
782	91.51	240	1.3	H	21.5	0.65	0	20.85	34.77
782	91.4	13	1.9	V	21.4	0.65	0	20.75	34.77
10 MHz Bandwidth									
782	91.39	33	1.4	H	21.4	0.65	0	20.75	34.77
782	91.1	20	1.1	V	21.1	0.65	0	20.45	34.77

**LTE Band17:**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.67	22.68	22.88
		RB Size=1, RB Offset=12	22.46	22.61	22.49
		RB Size=1, RB Offset=24	22.39	22.51	22.77
		RB Size=12, RB Offset=0	21.38	21.47	21.85
		RB Size=12, RB Offset=6	21.44	21.41	21.23
		RB Size=12, RB Offset=11	21.55	21.42	21.99
		RB Size=25, RB Offset=0	21.51	21.57	21.56
	16QAM	RB Size=1, RB Offset=0	21.58	21.51	21.73
		RB Size=1, RB Offset=12	21.64	21.49	21.46
		RB Size=1, RB Offset=24	21.48	21.71	21.31
		RB Size=12, RB Offset=0	20.34	20.37	20.61
		RB Size=12, RB Offset=6	20.41	20.48	20.39
		RB Size=12, RB Offset=11	20.45	20.61	20.37
		RB Size=25, RB Offset=0	20.51	20.39	20.68
10.0	QPSK	RB Size=1, RB Offset=0	22.58	22.45	22.98
		RB Size=1, RB Offset=24	22.69	22.99	22.27
		RB Size=1, RB Offset=49	22.74	22.66	22.71
		RB Size=25, RB Offset=0	21.69	21.54	21.51
		RB Size=25, RB Offset=12	21.65	21.68	21.39
		RB Size=25, RB Offset=24	21.67	21.62	21.84
		RB Size=50, RB Offset=0	21.66	21.62	21.85
	16QAM	RB Size=1, RB Offset=0	21.57	21.36	21.53
		RB Size=1, RB Offset=24	21.65	21.68	21.94
		RB Size=1, RB Offset=49	21.54	21.66	21.79
		RB Size=25, RB Offset=0	22.37	20.67	20.69
		RB Size=25, RB Offset=12	22.28	20.75	20.57
		RB Size=25, RB Offset=24	22.57	20.89	20.89
		RB Size=50, RB Offset=0	20.27	20.92	20.96

**Peak-to-average ratio (PAR):**

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.36	13	Pass
QPSK (50RB Size)	4.58	13	Pass
16QAM (1RB Size)	5.45	13	Pass
16QAM (50RB Size)	5.67	13	Pass

**EIRP:**

**QPSK:**

Frequency (MHz)	Receiver Reading (dBµV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
5 MHz Bandwidth									
710	91.19	49	1.3	H	21.7	0.62	0	21.08	34.77
710	91.42	130	1.8	V	21.9	0.62	0	21.28	34.77
10 MHz Bandwidth									
710	91.08	14	1.5	H	21.6	0.62	0	20.98	34.77
710	91.32	20	1.5	V	21.8	0.62	0	21.18	34.77

**16QAM:**

Frequency (MHz)	Receiver Reading (dBµV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
5 MHz Bandwidth									
710	92.28	78	1.3	H	22.8	0.62	0	22.18	34.77
710	91.73	4+	1.9	V	22.3	0.62	0	21.68	34.77
10 MHz Bandwidth									
710	92.03	14	1.8	H	22.5	0.62	0	21.88	34.77
710	91.59	86	1.7	V	22.1	0.62	0	21.48	34.77

**LTE Band 25:**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.37	22.37	22.52
		RB Size=1, RB Offset=2	22.42	22.48	22.40
		RB Size=1, RB Offset=5	22.36	22.52	22.44
		RB Size=3, RB Offset=0	22.38	22.39	22.28
		RB Size=3, RB Offset=1	22.49	22.48	22.44
		RB Size=3, RB Offset=2	22.86	22.57	22.38
		RB Size=6, RB Offset=0	22.36	22.13	22.41
	16QAM	RB Size=1, RB Offset=0	22.06	22.67	22.19
		RB Size=1, RB Offset=2	22.58	22.47	22.37
		RB Size=1, RB Offset=5	21.58	21.77	21.58
		RB Size=3, RB Offset=0	21.53	21.49	21.62
		RB Size=3, RB Offset=1	21.62	21.59	21.56
		RB Size=3, RB Offset=2	21.54	21.46	21.71
		RB Size=6, RB Offset=0	21.42	21.62	21.39
3.0	QPSK	RB Size=1, RB Offset=0	22.56	22.74	22.44
		RB Size=1, RB Offset=7	22.51	22.56	22.53
		RB Size=1, RB Offset=14	22.5	22.42	22.51
		RB Size=8, RB Offset=0	21.56	21.66	21.56
		RB Size=8, RB Offset=4	21.57	21.39	21.42
		RB Size=8, RB Offset=7	21.66	21.48	21.64
		RB Size=15, RB Offset=0	21.62	21.62	21.64
	16QAM	RB Size=1, RB Offset=0	22.45	22.44	22.5
		RB Size=1, RB Offset=7	22.52	22.65	22.53
		RB Size=1, RB Offset=14	22.6	21.45	21.71
		RB Size=8, RB Offset=0	20.81	20.7	20.83
		RB Size=8, RB Offset=4	20.73	20.73	20.75
		RB Size=8, RB Offset=7	20.74	20.7	20.78
		RB Size=15, RB Offset=0	20.72	20.82	20.67



Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.86	22.94	22.93
		RB Size=1, RB Offset=12	22.8	22.85	22.7
		RB Size=1, RB Offset=24	22.78	22.6	22.73
		RB Size=12, RB Offset=0	21.29	21.33	21.35
		RB Size=12, RB Offset=6	21.42	21.58	21.3
		RB Size=12, RB Offset=11	21.41	21.49	21.33
		RB Size=25, RB Offset=0	21.39	21.32	21.36
	16QAM	RB Size=1, RB Offset=0	21.45	21.31	21.55
		RB Size=1, RB Offset=12	21.51	21.64	21.65
		RB Size=1, RB Offset=24	21.88	21.36	21.54
		RB Size=12, RB Offset=0	20.67	20.61	20.62
		RB Size=12, RB Offset=6	20.68	20.67	20.84
		RB Size=12, RB Offset=11	20.69	20.65	20.72
		RB Size=25, RB Offset=0	20.7	20.63	20.76
10.0	QPSK	RB Size=1, RB Offset=0	22.36	22.34	22.37
		RB Size=1, RB Offset=24	22.39	22.5	22.32
		RB Size=1, RB Offset=49	22.34	22.29	22.32
		RB Size=25, RB Offset=0	21.61	21.4	21.53
		RB Size=25, RB Offset=12	21.49	21.7	21.41
		RB Size=25, RB Offset=24	21.52	21.36	21.57
		RB Size=50, RB Offset=0	21.51	21.63	21.53
	16QAM	RB Size=1, RB Offset=0	21.51	21.51	21.46
		RB Size=1, RB Offset=24	21.53	21.51	21.58
		RB Size=1, RB Offset=49	21.31	21.49	21.13
		RB Size=25, RB Offset=0	20.67	20.71	20.74
		RB Size=25, RB Offset=12	20.62	20.62	20.54
		RB Size=25, RB Offset=24	20.64	20.59	20.56
		RB Size=50, RB Offset=0	20.72	20.26	20.56

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15.0	QPSK	RB Size=1, RB Offset=0	22.36	22.35	22.3
		RB Size=1, RB Offset=37	22.31	22.36	22.38
		RB Size=1, RB Offset=74	22.23	22.21	22.18
		RB Size=36, RB Offset=0	22.26	22.38	22.19
		RB Size=36, RB Offset=18	22.29	22.31	22.21
		RB Size=36, RB Offset=37	22.28	22.22	22.25
		RB Size=75, RB Offset=0	21.37	21.29	21.41
	16QAM	RB Size=1, RB Offset=0	21.27	21.05	21.35
		RB Size=1, RB Offset=37	21.39	21.42	21.47
		RB Size=1, RB Offset=74	21.39	21.41	21.39
		RB Size=36, RB Offset=0	21.38	21.41	21.49
		RB Size=36, RB Offset=18	21.29	21.26	21.24
		RB Size=36, RB Offset=37	21.44	20.75	21.45
		RB Size=75, RB Offset=0	21.37	21.29	21.41
20.0	QPSK	RB Size=1, RB Offset=0	22.36	22.28	22.35
		RB Size=1, RB Offset=49	22.34	22.16	22.46
		RB Size=1, RB Offset=99	22.32	22.15	22.84
		RB Size=50, RB Offset=0	21.24	21.26	21.2
		RB Size=50, RB Offset=24	21.23	21.19	21.26
		RB Size=50, RB Offset=49	21.21	21.12	21.12
		RB Size=100, RB Offset=0	21.21	21.15	21.28
	16QAM	RB Size=1, RB Offset=0	22.08	21.99	22.17
		RB Size=1, RB Offset=49	21.22	21.27	21.03
		RB Size=1, RB Offset=99	21.15	21.26	21.25
		RB Size=50, RB Offset=0	20.87	20.84	20.98
		RB Size=50, RB Offset=24	20.59	20.62	20.63
		RB Size=50, RB Offset=49	20.53	20.53	20.52
		RB Size=100, RB Offset=0	20.65	20.56	20.59

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

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.67	13	Pass
QPSK (100RB Size)	4.18	13	Pass
16QAM (1RB Size)	5.55	13	Pass
16QAM (100RB Size)	5.33	13	Pass

**EIRP:**

**QPSK:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
1882.50	85.46	86	1.3	H	15.4	1.30	8.50	22.60	33
1882.50	83.19	358	1.4	V	12.9	1.30	8.50	20.10	33
3 MHz Bandwidth									
1882.50	85.76	86	1.5	H	15.7	1.30	8.50	22.90	33
1882.50	84.61	356	1.9	V	14.3	1.30	8.50	21.50	33
5 MHz Bandwidth									
1882.50	84.71	86	1.6	H	14.7	1.30	8.50	21.90	33
1882.50	84.11	159	1.2	V	13.8	1.30	8.50	21.00	33
10 MHz Bandwidth									
1882.50	84.67	86	2.1	H	14.6	1.30	8.50	21.80	33
1882.50	83.59	108	1.7	V	13.3	1.30	8.50	20.50	33
15 MHz Bandwidth									
1882.50	85.46	86	1.9	H	15.4	1.30	8.50	22.60	33
1882.50	84.22	312	1.7	V	14.0	1.30	8.50	21.20	33
20 MHz Bandwidth									
1882.50	84.44	86	1.9	H	14.4	1.30	8.50	21.60	33
1882.50	83.52	270	1.1	V	13.3	1.30	8.50	20.50	33

**16QAM:**

Frequency (MHz)	Receiver Reading (dBµV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
1882.50	85.46	86	2.0	H	15.4	1.30	8.50	22.60	33
1882.50	83.27	177	1.2	V	13.0	1.30	8.50	20.20	33
3 MHz Bandwidth									
1882.50	85.76	86	1.5	H	15.7	1.30	8.50	22.90	33
1882.50	84.22	81	2.5	V	14.0	1.30	8.50	21.20	33
5 MHz Bandwidth									
1882.50	85.24	292	2.1	H	15.2	1.30	8.50	22.40	33
1882.50	84.08	103	1.2	V	13.8	1.30	8.50	21.00	33
10 MHz Bandwidth									
1882.50	84.97	302	1.8	H	14.9	1.30	8.50	22.10	33
1882.50	82.08	187	2.3	V	11.8	1.30	8.50	19.00	33
15 MHz Bandwidth									
1882.50	84.97	302	1.8	H	14.9	1.30	8.50	22.10	33
1882.50	82.08	187	2.3	V	11.8	1.30	8.50	19.00	33
20 MHz Bandwidth									
1882.50	84.77	86	2.2	H	14.7	1.30	8.50	21.90	33
1882.50	83.46	23	1.6	V	13.2	1.30	8.50	20.40	33

**LTE Band 26**

**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	23.06	22.89	23.04
		RB Size=1, RB Offset=2	23.20	23.01	23.14
		RB Size=1, RB Offset=5	23.02	23.05	23.15
		RB Size=3, RB Offset=0	22.82	23.03	22.99
		RB Size=3, RB Offset=1	23.10	22.91	22.89
		RB Size=3, RB Offset=2	23.04	22.82	22.88
		RB Size=6, RB Offset=0	21.92	21.94	21.91
	16QAM	RB Size=1, RB Offset=0	22.31	22.21	22.17
		RB Size=1, RB Offset=2	22.40	22.26	22.23
		RB Size=1, RB Offset=5	22.12	22.16	21.91
		RB Size=3, RB Offset=0	21.99	22.01	22.18
		RB Size=3, RB Offset=1	22.17	22.25	22.24
		RB Size=3, RB Offset=2	22.15	22.12	22.28
		RB Size=6, RB Offset=0	20.40	20.44	20.31
3.0	QPSK	RB Size=1, RB Offset=0	22.92	22.79	22.8
		RB Size=1, RB Offset=7	23.10	22.67	22.68
		RB Size=1, RB Offset=14	23.01	22.69	22.98
		RB Size=8, RB Offset=0	22.09	21.87	21.93
		RB Size=8, RB Offset=4	21.99	22.01	21.95
		RB Size=8, RB Offset=7	21.97	21.75	21.74
		RB Size=15, RB Offset=0	21.95	21.95	21.84
	16QAM	RB Size=1, RB Offset=0	21.59	21.62	21.76
		RB Size=1, RB Offset=7	21.63	21.73	21.51
		RB Size=1, RB Offset=14	21.84	21.53	21.56
		RB Size=8, RB Offset=0	21.24	21.25	21.33
		RB Size=8, RB Offset=4	21.41	21.31	21.16
		RB Size=8, RB Offset=7	21.02	20.91	20.97
		RB Size=15, RB Offset=0	20.77	20.63	20.84

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.92	23.01	23.13
		RB Size=1, RB Offset=12	22.13	21.99	22.13
		RB Size=1, RB Offset=24	23.23	23.01	23.16
		RB Size=12, RB Offset=0	21.69	21.86	21.71
		RB Size=12, RB Offset=6	21.78	21.88	21.84
		RB Size=12, RB Offset=11	21.93	21.93	21.82
		RB Size=25, RB Offset=0	22.02	21.83	22.10
	16QAM	RB Size=1, RB Offset=0	21.36	21.44	21.44
		RB Size=1, RB Offset=12	21.54	21.44	21.47
		RB Size=1, RB Offset=24	21.55	21.65	21.66
		RB Size=12, RB Offset=0	20.83	20.79	20.7
		RB Size=12, RB Offset=6	21.11	20.95	21.24
		RB Size=12, RB Offset=11	21.07	20.98	21.07
		RB Size=25, RB Offset=0	21.11	20.87	20.95
10.0	QPSK	RB Size=1, RB Offset=0	/	22.82	/
		RB Size=1, RB Offset=24	/	22.88	/
		RB Size=1, RB Offset=49	/	22.79	/
		RB Size=25, RB Offset=0	/	21.78	/
		RB Size=25, RB Offset=12	/	21.90	/
		RB Size=25, RB Offset=24	/	21.92	/
		RB Size=50, RB Offset=0	/	21.84	/
	16QAM	RB Size=1, RB Offset=0	/	21.71	/
		RB Size=1, RB Offset=24	/	22.44	/
		RB Size=1, RB Offset=49	/	21.55	/
		RB Size=25, RB Offset=0	/	20.84	/
		RB Size=25, RB Offset=12	/	21.04	/
		RB Size=25, RB Offset=24	/	20.83	/
		RB Size=50, RB Offset=0	/	20.79	/

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

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	7.43	13	Pass
QPSK (50RB Size)	7.56	13	Pass
16QAM (1RB Size)	7.15	13	Pass
16QAM (50RB Size)	7.12	13	Pass

**QPSK:**

Frequency (MHz)	Receiver Reading (dBµV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
819	90.26	63	1.3	H	20.6	0.66	0	19.94	50
819	89.01	100	1.4	V	19.3	0.66	0	18.64	50
3 MHz Bandwidth									
819	90.09	42	1.9	H	20.4	0.66	0	19.74	50
819	88.88	187	1.4	V	19.2	0.66	0	18.54	50
5 MHz Bandwidth									
819	89.97	206	1.7	H	20.3	0.66	0	19.64	50
819	88.76	57	1.2	V	19.1	0.66	0	18.44	50
10 MHz Bandwidth									
819	89.61	50	1.4	H	19.9	0.66	0	19.24	50
819	88.53	22	1.1	V	18.8	0.66	0	18.14	50

**16QAM:**

Frequency (MHz)	Receiver Reading (dBµV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
1.4 MHz Bandwidth									
819	90.1	58	1.5	H	20.4	0.66	0	19.74	50
819	88.61	204	1.6	V	18.9	0.66	0	18.24	50
3 MHz Bandwidth									
819	89.79	107	1.3	H	20.1	0.66	0	19.44	50
819	88.4	251	1.5	V	18.7	0.66	0	18.04	50
5 MHz Bandwidth									
819	89.27	305	1.7	H	19.6	0.66	0	18.94	50
819	88.22	232	1.4	V	18.5	0.66	0	17.84	50
10 MHz Bandwidth									
819	89.18	301	1.2	H	19.5	0.66	0	18.84	50
819	88.09	24	1.1	V	18.4	0.66	0	17.74	50



**LTE Band 41**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.85	22.19	22.61
		RB Size=1, RB Offset=12	22.72	22.79	22.64
		RB Size=1, RB Offset=24	22.78	22.94	22.76
		RB Size=12, RB Offset=0	22.86	23.06	22.79
		RB Size=12, RB Offset=6	22.84	22.72	22.81
		RB Size=12, RB Offset=11	22.75	22.79	22.64
		RB Size=25, RB Offset=0	22.78	22.94	22.7
	16QAM	RB Size=1, RB Offset=0	22.86	23.06	22.79
		RB Size=1, RB Offset=12	22.42	22.43	22.48
		RB Size=1, RB Offset=24	21.08	21.69	21.82
		RB Size=12, RB Offset=0	21.17	21.25	21.14
		RB Size=12, RB Offset=6	21.18	21.13	21.17
		RB Size=12, RB Offset=11	21.11	21.23	21.33
		RB Size=25, RB Offset=0	21.21	21.19	21.17
10.0	QPSK	RB Size=1, RB Offset=0	22.65	22.19	22.28
		RB Size=1, RB Offset=24	22.73	22.78	22.77
		RB Size=1, RB Offset=49	22.83	22.68	22.8
		RB Size=25, RB Offset=0	21.02	20.82	21.27
		RB Size=25, RB Offset=12	21.09	21.28	21.03
		RB Size=25, RB Offset=24	21.1	21.15	20.99
		RB Size=50, RB Offset=0	21.05	21.06	21.09
	16QAM	RB Size=1, RB Offset=0	22.85	22.86	22.89
		RB Size=1, RB Offset=24	22.76	22.96	22.77
		RB Size=1, RB Offset=49	22.84	22.92	22.99
		RB Size=25, RB Offset=0	20.59	20.78	20.91
		RB Size=25, RB Offset=12	20.71	20.63	20.52
		RB Size=25, RB Offset=24	20.55	20.61	20.49
		RB Size=50, RB Offset=0	20.54	20.71	20.39

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15.0	QPSK	RB Size=1, RB Offset=0	22.58	22.46	22.31
		RB Size=1, RB Offset=37	22.52	22.51	22.54
		RB Size=1, RB Offset=74	22.34	22.51	22.41
		RB Size=36, RB Offset=0	21.6	21.78	21.46
		RB Size=36, RB Offset=18	21.68	21.47	21.65
		RB Size=36, RB Offset=37	21.7	21.59	21.8
		RB Size=75, RB Offset=0	21.72	21.85	21.8
	16QAM	RB Size=1, RB Offset=0	21.74	21.59	21.72
		RB Size=1, RB Offset=37	21.71	21.55	21.69
		RB Size=1, RB Offset=74	21.80	21.37	21.53
		RB Size=36, RB Offset=0	20.55	20.63	20.6
		RB Size=36, RB Offset=18	20.51	20.37	20.41
		RB Size=36, RB Offset=37	20.46	20.54	20.63
		RB Size=75, RB Offset=0	20.45	20.3	20.33
20.0	QPSK	RB Size=1, RB Offset=0	22.39	22.42	22.52
		RB Size=1, RB Offset=49	22.29	22.26	22.32
		RB Size=1, RB Offset=99	22.34	22.27	22.37
		RB Size=50, RB Offset=0	21.96	21.82	21.72
		RB Size=50, RB Offset=24	21.95	21.79	22.04
		RB Size=50, RB Offset=49	21.94	21.96	22.01
		RB Size=100, RB Offset=0	21.94	21.96	21.85
	16QAM	RB Size=1, RB Offset=0	22	21.87	21.95
		RB Size=1, RB Offset=49	21.94	21.77	21.79
		RB Size=1, RB Offset=99	21.93	21.3	21.94
		RB Size=50, RB Offset=0	22.28	20.86	20.96
		RB Size=50, RB Offset=24	22.61	20.59	20.67
		RB Size=50, RB Offset=49	20.69	20.54	20.68
		RB Size=100, RB Offset=0	20.49	20.86	20.55

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

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.46	13	Pass
QPSK (100RB Size)	6.53	13	Pass
16QAM (1RB Size)	7.65	13	Pass
16QAM (100RB Size)	7.94	13	Pass

**EIRP:**

**QPSK:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
5 MHz Bandwidth									
2593.00	81.64	86	1.3	H	12.1	2.20	9.40	19.30	33
2593.00	82.31	287	1.6	V	13.1	2.20	9.40	20.30	33
10 MHz Bandwidth									
2593.00	81.33	86	2.2	H	11.8	2.20	9.40	19.00	33
2593.00	81.52	122	1.2	V	12.3	2.20	9.40	19.50	33
15 MHz Bandwidth									
2593.00	81.66	86	1.9	H	12.1	2.20	9.40	19.30	33
2593.00	80.73	143	1.4	V	11.5	2.20	9.40	18.70	33
20 MHz Bandwidth									
2593.00	81.77	86	1.4	H	12.2	2.20	9.40	19.40	33
2593.00	81.32	66	1.2	V	12.1	2.20	9.40	19.30	33

**16QAM:**

Frequency (MHz)	Receiver Reading (dBµV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		
Middle Channel									
5 MHz Bandwidth									
2593.00	81.49	86	1.8	H	11.9	2.20	9.40	19.10	33
2593.00	82.64	263	1.7	V	13.4	2.20	9.40	20.60	33
10 MHz Bandwidth									
2593.00	81.55	155	2.4	H	12.0	2.20	9.40	19.20	33
2593.00	82.32	99	1.9	V	13.1	2.20	9.40	20.30	33
15 MHz Bandwidth									
2593.00	81.19	236	1.9	H	11.6	2.20	9.40	18.80	33
2593.00	80.68	174	1.6	V	11.5	2.20	9.40	18.70	33
20 MHz Bandwidth									
2593.00	81.34	86	2.3	H	11.8	2.20	9.40	19.00	33
2593.00	81.58	268	1.9	V	12.4	2.20	9.40	19.60	33

**Note:**

All above data were tested with no amplifier

Absolute Level = SG Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

**FCC §2.1049, §22.917, §22.905 & §24.238 & §27.53 & §90S - OCCUPIED BANDWIDTH**

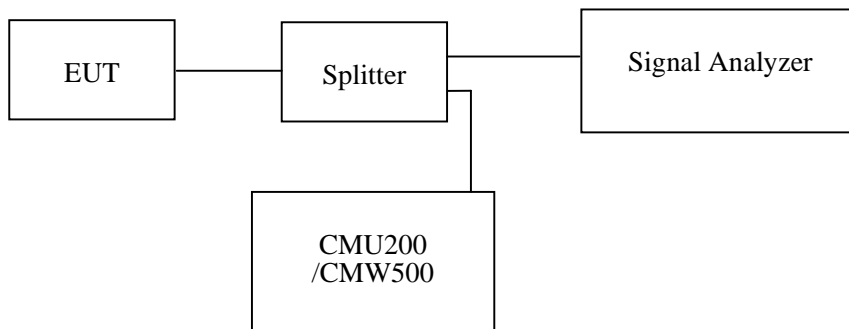
**Applicable Standard**

FCC 47 §2.1049, §22.917, §22.905, §24.238 , §27.53 and §90S.

**Test Procedure**

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

The resolution bandwidth of the spectrum analyzer was set at 1% -5%of the OBW and the 26 dB & 99% bandwidth was recorded.



**Test Data**

**Environmental Conditions**

<b>Temperature:</b>	23~25 °C
<b>Relative Humidity:</b>	48~55 %
<b>ATM Pressure:</b>	100.0~101.0 kPa

*The testing was performed by Simon Wang from 2018-01-06 to 2018-04-18.*

*EUT operation mode: Transmitting*

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

### Cellular Band (Part 22H)

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	836.6	243.6	307.7
EGPRS(8PSK)	836.6	245.2	312.5

Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
CDMA (1*RTT) BC0	836.52	1.28	1.43
CDMA (EV-DO) BC0	836.52	1.27	1.43

Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
RMC (BPSK)	836.6	4.10	4.68
HSUPA (BPSK)	836.6	4.13	4.70
HSDPA (16QAM)	836.6	4.12	4.71

### PART 90S

Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
CDMA (1*RTT) BC10	820.50	1.28	1.43
CDMA (EV-DO) BC10	820.50	1.27	1.43

**PCS Band (Part 24E)**

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	1880.0	242.0	304.5
EGPRS(8PSK)	1880.0	243.6	312.5

Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
CDMA (1*RTT) BC1	1880.00	1.27	1.42
CDMA (EV-DO) BC1	1880.00	1.27	1.43

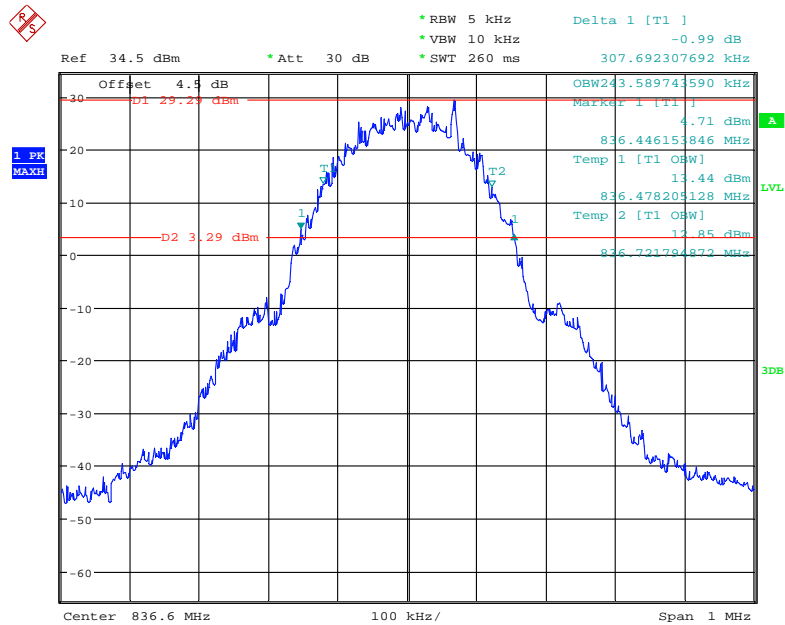
Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
RMC (BPSK)	1880.0	4.12	4.70
HSUPA (BPSK)	1880.0	4.13	4.71
HSDPA (16QAM)	1880.0	4.12	4.73

**AWS Band (Part 27)**

Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
RMC (BPSK)	1732.6	4.12	4.70
HSUPA (BPSK)	1732.6	4.13	4.68
HSDPA (16QAM)	1732.6	4.13	4.73

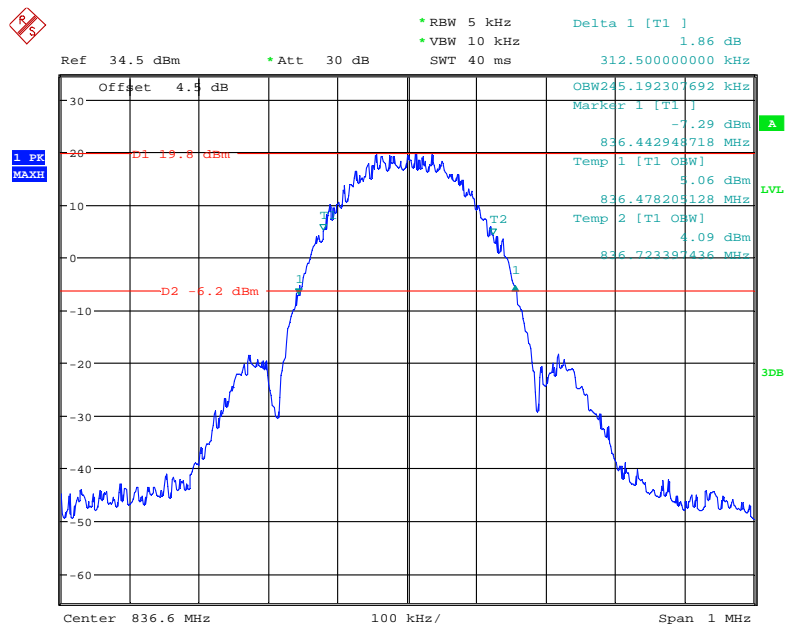
Cellular Band (Part 22H)

26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode



Date: 6.JAN.2018 14:08:52

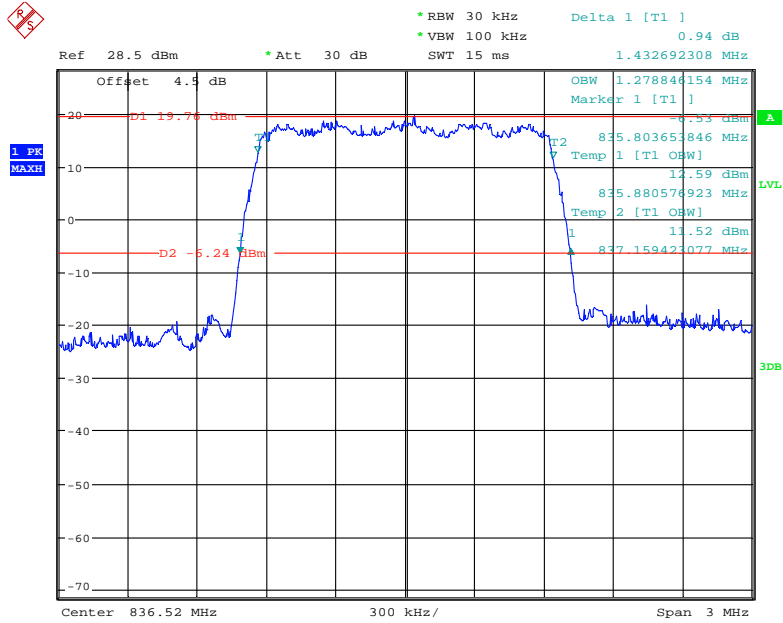
26 dB Emissions & 99% Occupied Bandwidth for EGPRS (8PSK) Mode



Date: 6.JAN.2018 14:30:39

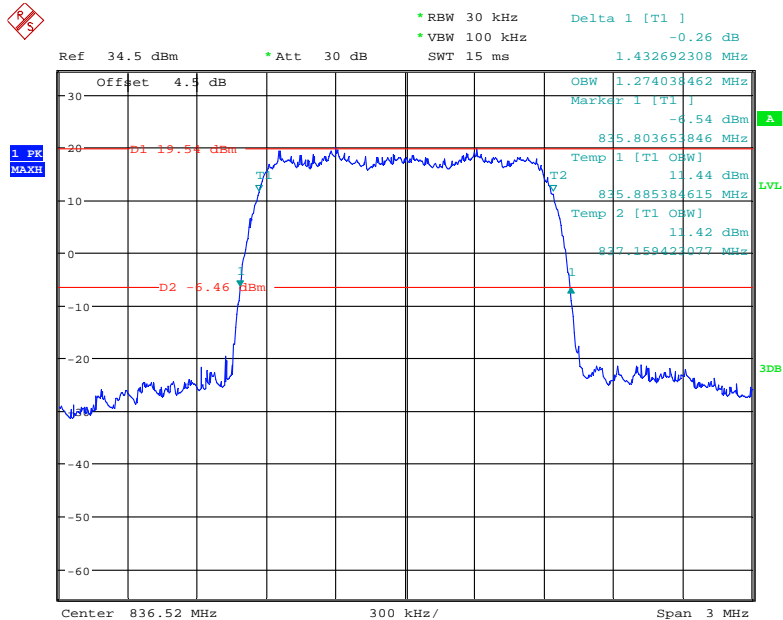


**26 dB Emissions & 99% Occupied Bandwidth for CDMA Mode (1\*RTT ,BC0), Middle channel**



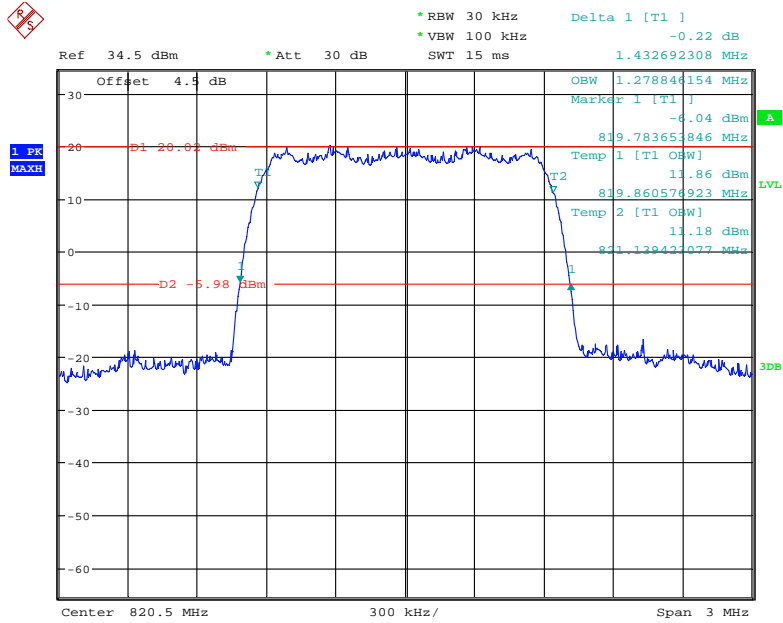
Date: 27.FEB.2018 15:00:23

**26 dB Emissions & 99% Occupied Bandwidth for CDMA (EV-DO, BC0) Mode, Middle channel**



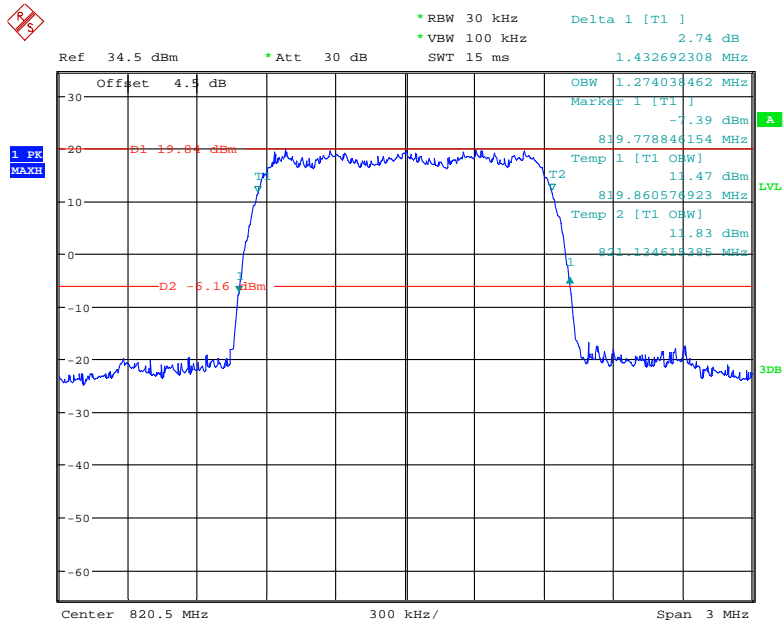
Date: 28.FEB.2018 17:11:16

**PART 90S**  
**26 dB Emissions & 99% Occupied Bandwidth for CDMA Mode (1\*RTT ,BC10), Middle channel**



Date: 27.FEB.2018 16:14:57

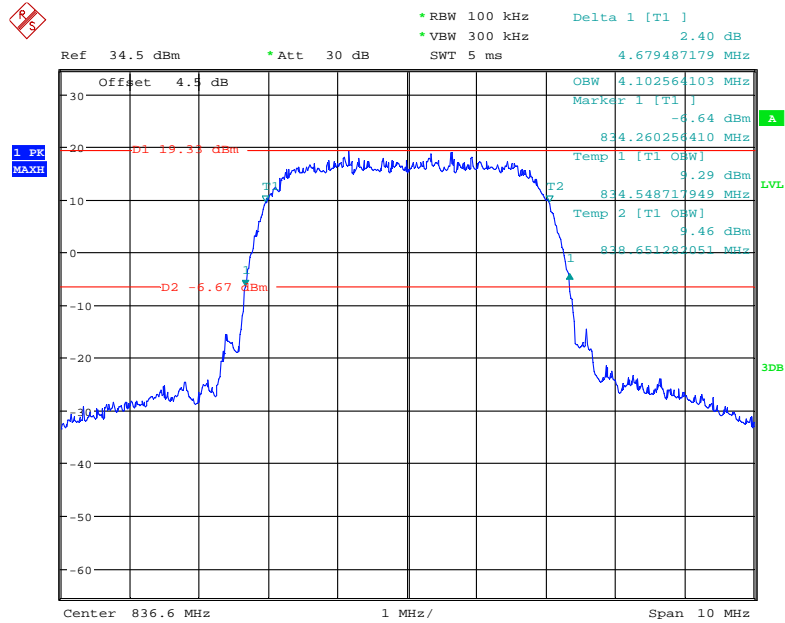
**26 dB Emissions & 99% Occupied Bandwidth for CDMA (EV-DO, BC10) Mode, Middle channel**



Date: 28.FEB.2018 18:12:20

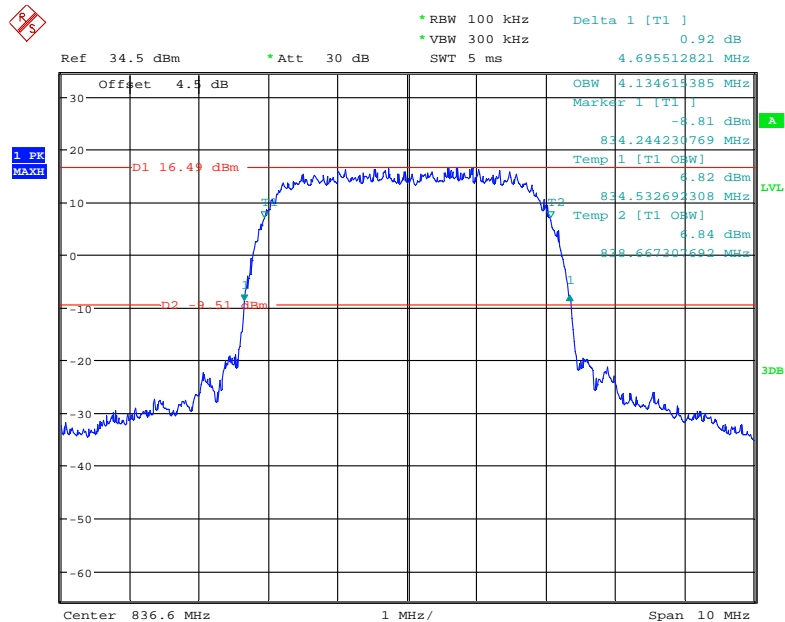
PART 22

26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode



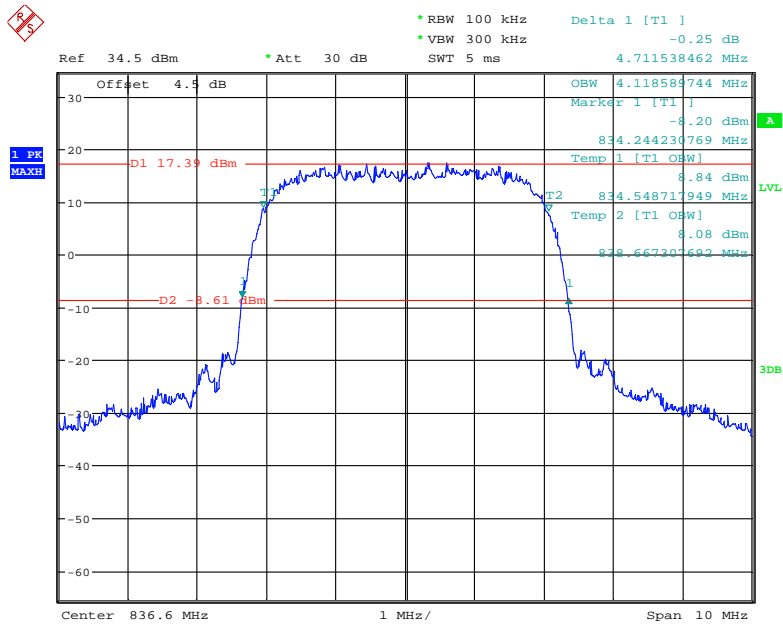
Date: 6.JAN.2018 15:59:57

26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode



Date: 6.JAN.2018 16:01:32

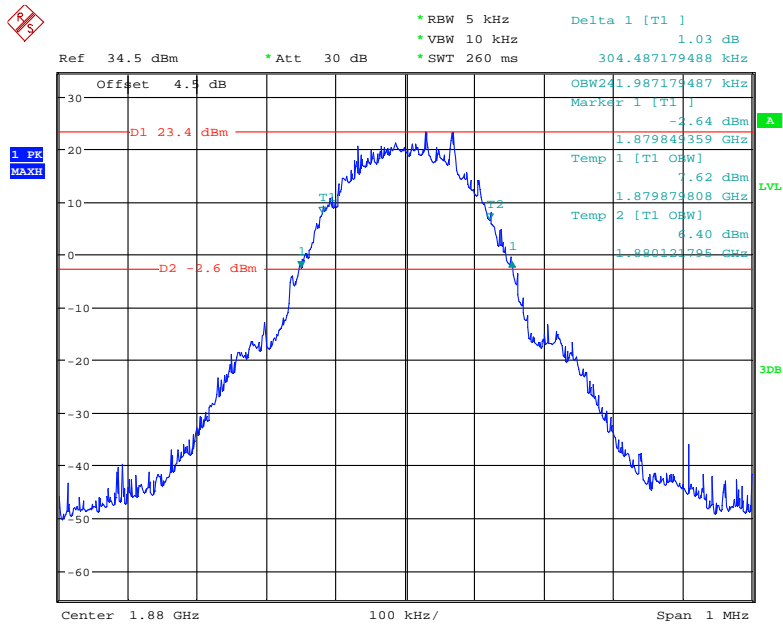
### 26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode



Date: 6.JAN.2018 16:07:38

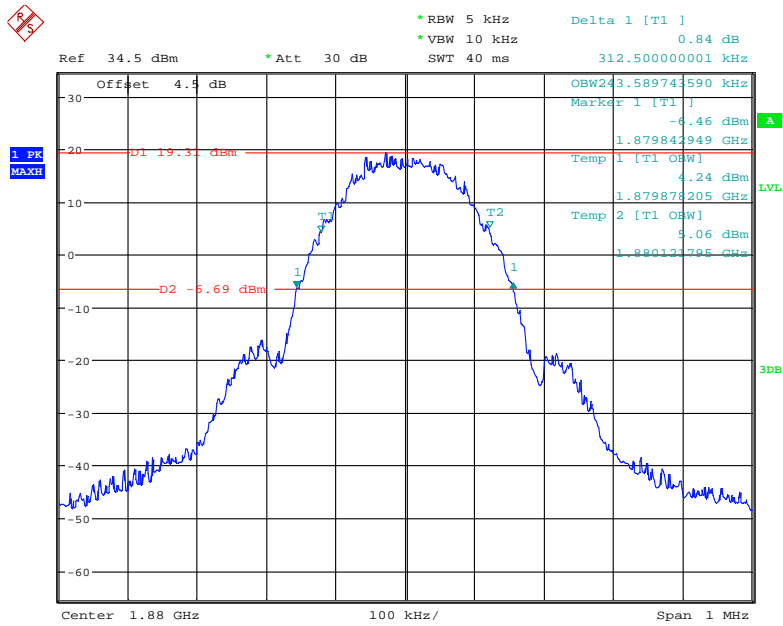
### PCS Band (Part 24E)

### 26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode



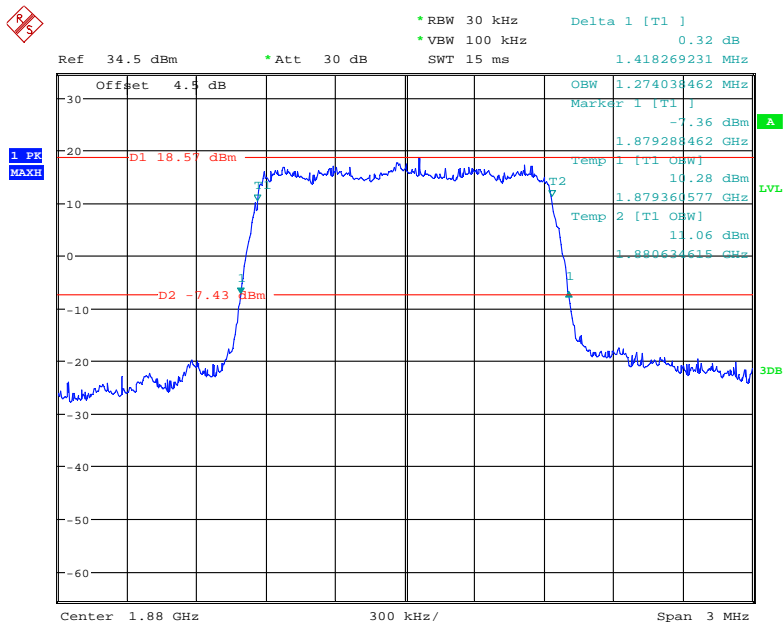
Date: 6.JAN.2018 14:17:29

### 26 dB Emissions & 99% Occupied Bandwidth for EGPRS (8PSK) Mode



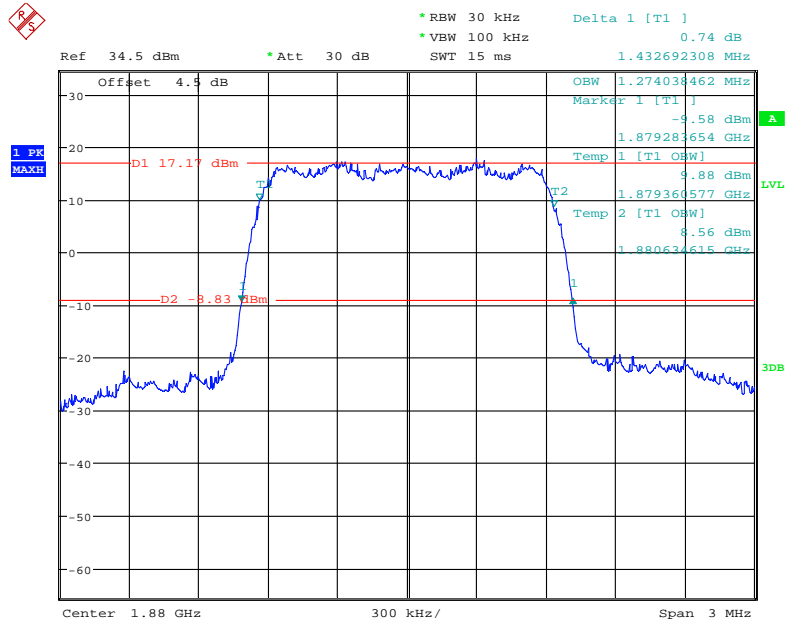
Date: 6.JAN.2018 14:39:42

### 26 dB Emissions & 99% Occupied Bandwidth for CDMA Mode (1\*RTT, BC1), Middle channel



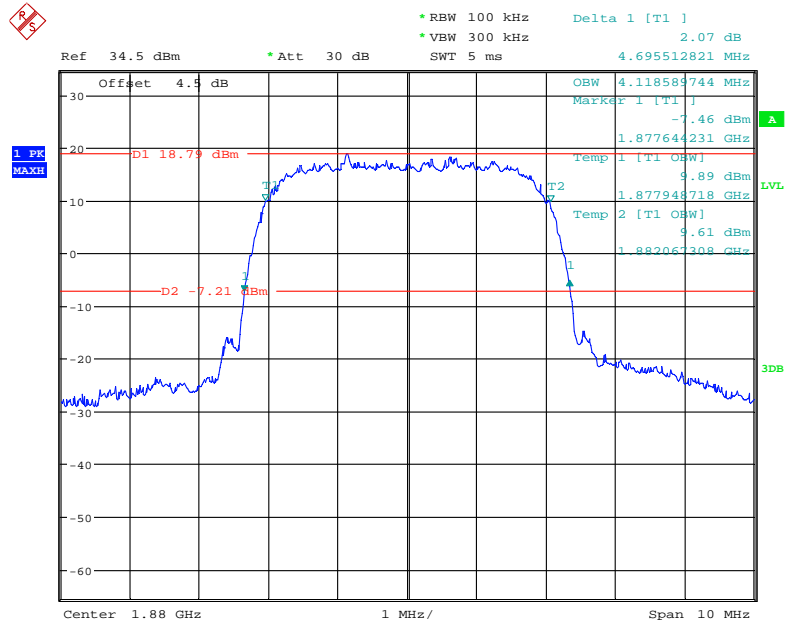
Date: 27.FEB.2018 15:27:22

**26 dB Emissions & 99% Occupied Bandwidth for CDMA (EV-DO, BC1) Mode, Middle channel**



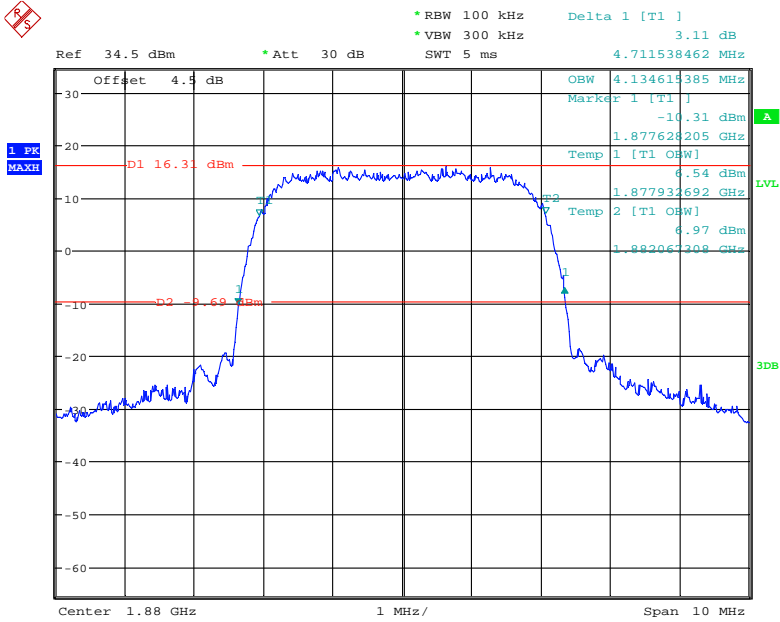
Date: 28.FEB.2018 17:51:40

**26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode**



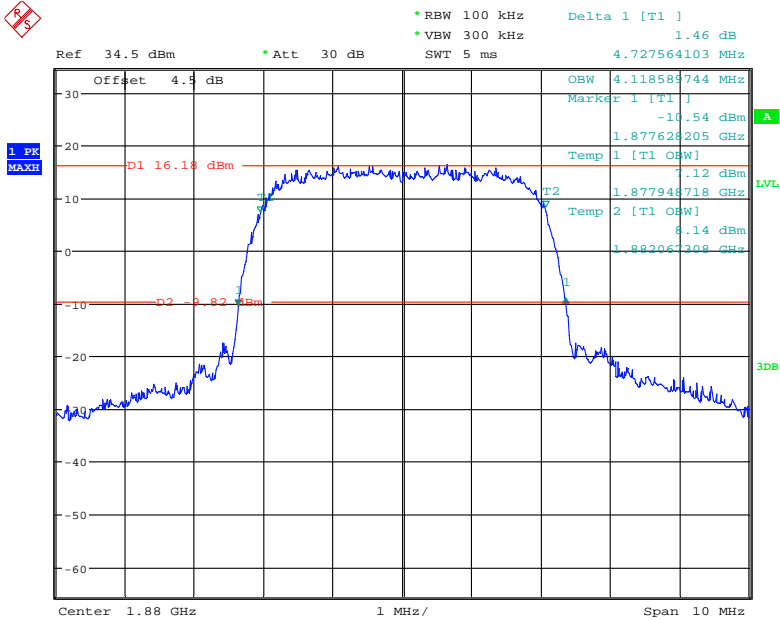
Date: 6.JAN.2018 15:56:40

**26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode**



Date: 6.JAN.2018 16:03:48

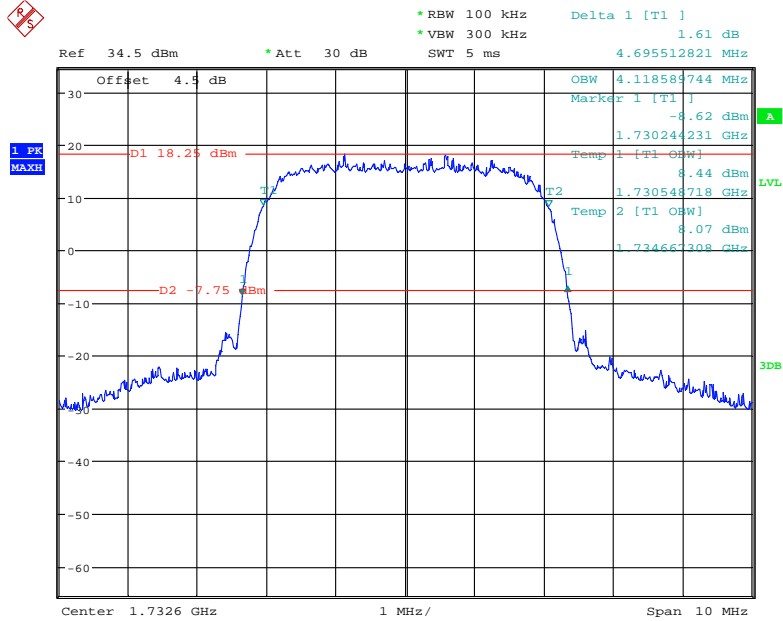
**26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode**



Date: 6.JAN.2018 16:04:52

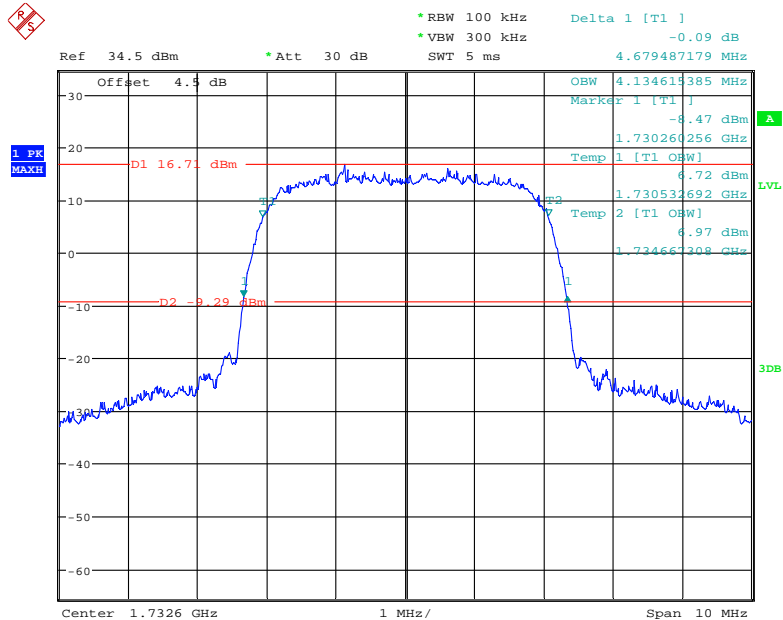
**AWS Band (Part 27)**

**26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode**



Date: 6.JAN.2018 15:58:57

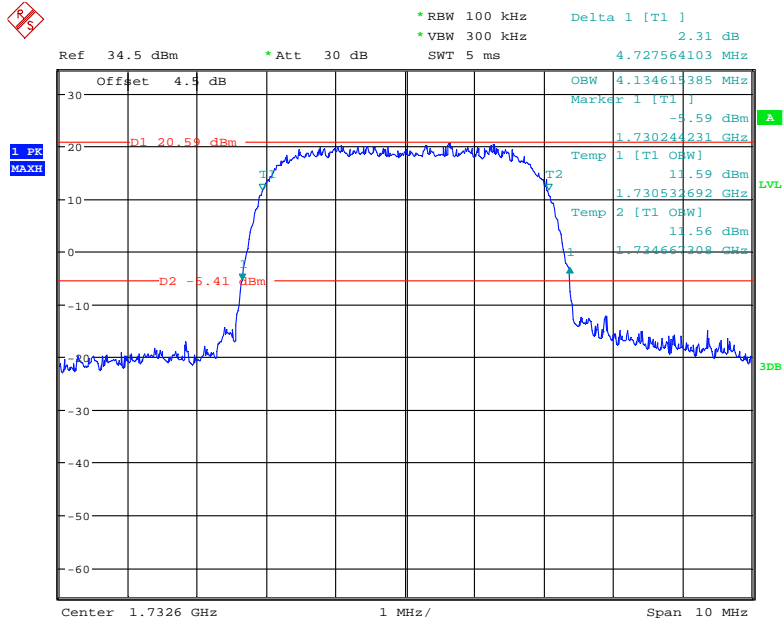
**26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode**



Date: 6.JAN.2018 16:02:47



**26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode**

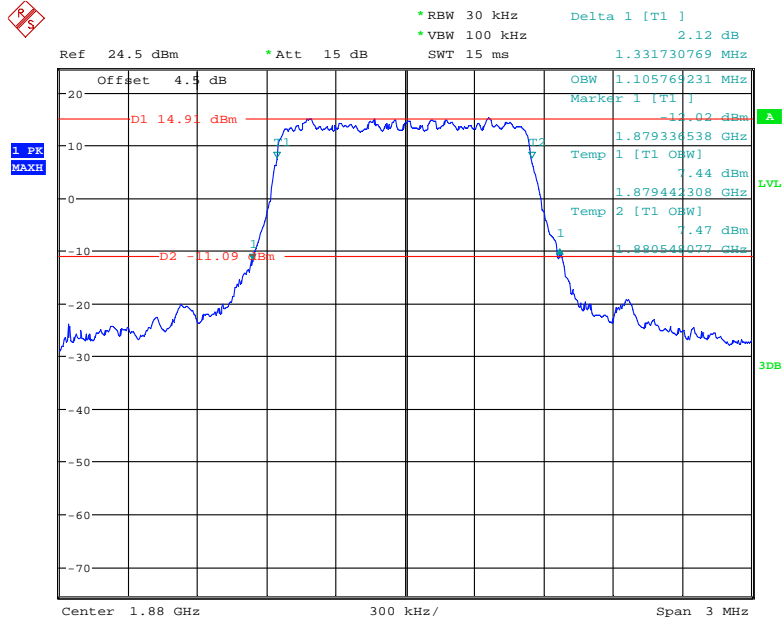


Date: 6.JAN.2018 16:06:27

**LTE Band 2: (Middle Channel)**

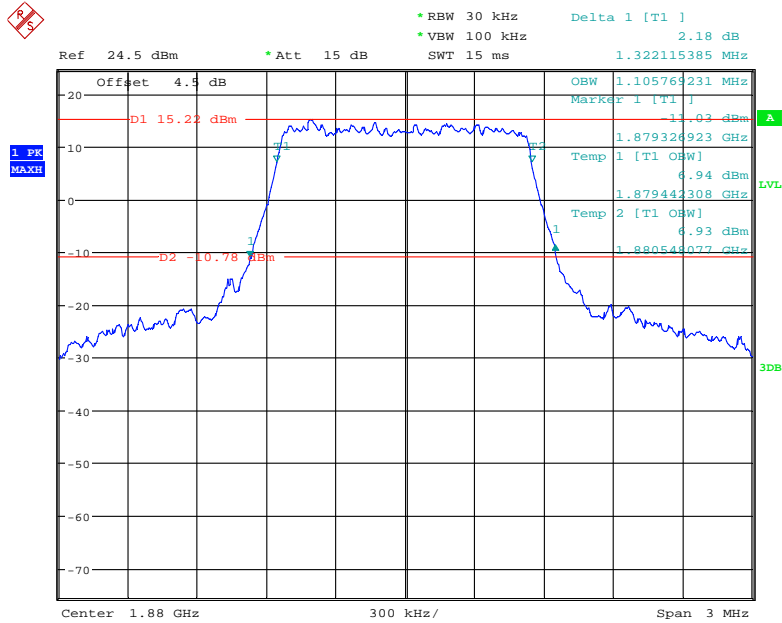
<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
1.4	QPSK	1.106	1.332
	16QAM	1.106	1.322
3.0	QPSK	2.692	2.918
	16QAM	2.702	2.966
5.0	QPSK	4.519	5.005
	16QAM	4.487	4.973
10.0	QPSK	8.974	9.647
	16QAM	8.974	9.647
15.0	QPSK	13.462	14.519
	16QAM	13.413	14.519
20.0	QPSK	17.885	19.054
	16QAM	17.885	19.119

**QPSK (1.4 MHz) -26 dB Emissions &99% Occupied Bandwidth, Middle channel**



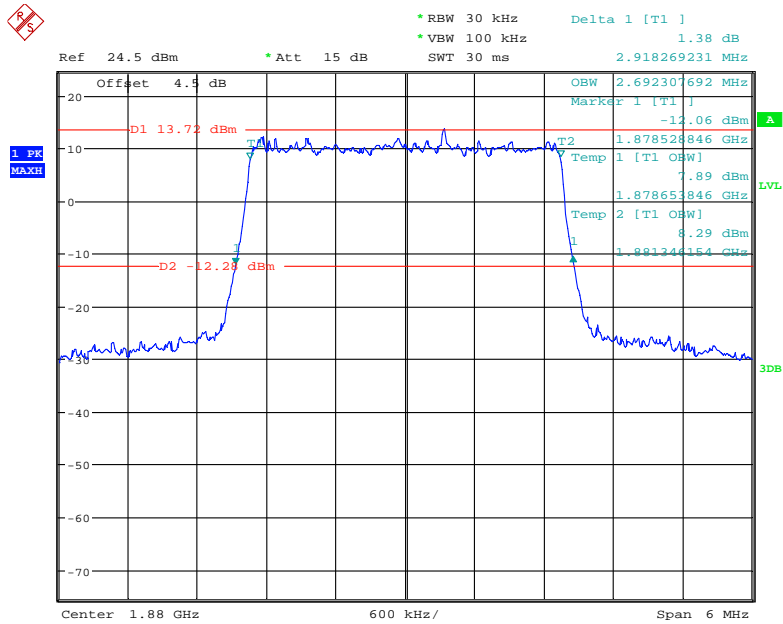
Date: 9.JAN.2018 14:36:35

**16-QAM (1.4 MHz) - 26 dB Emissions &99% Occupied Bandwidth, Middle channel**



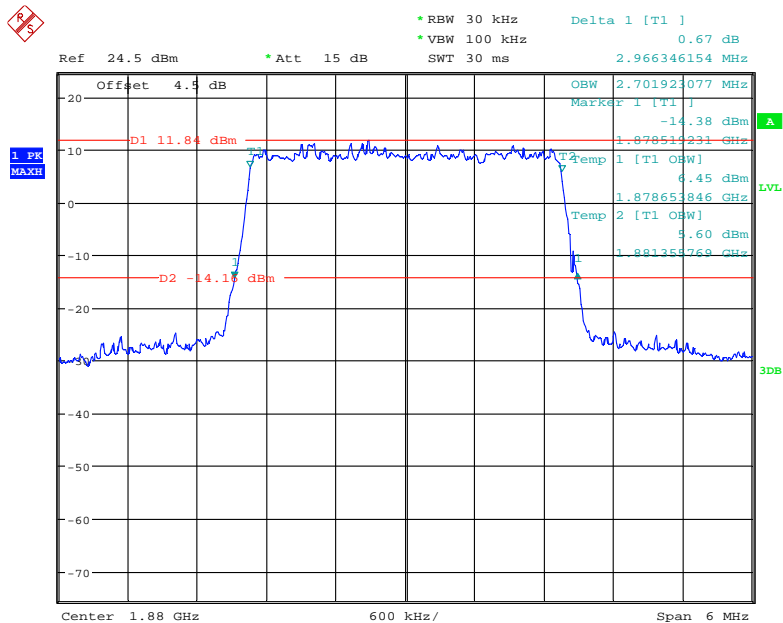
Date: 9.JAN.2018 14:34:08

**QPSK (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



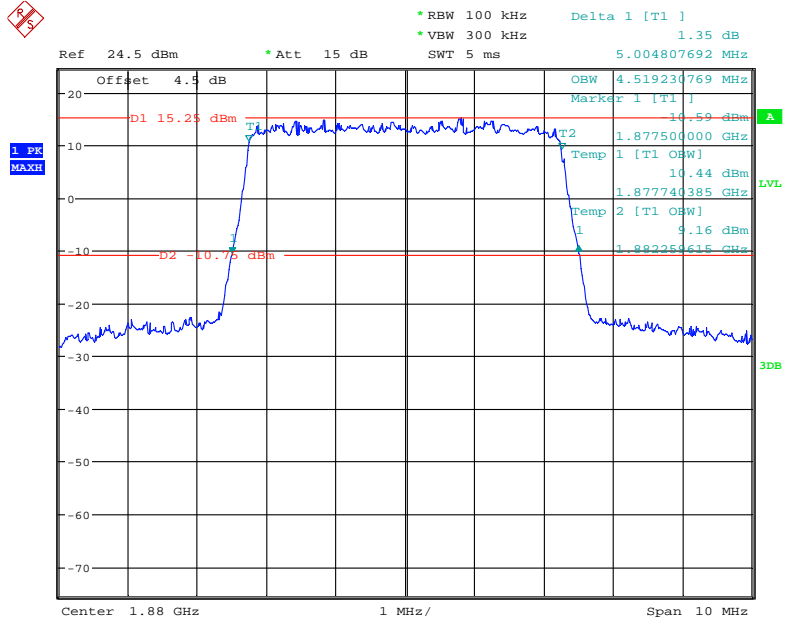
Date: 9.JAN.2018 14:40:51

**16-QAM (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



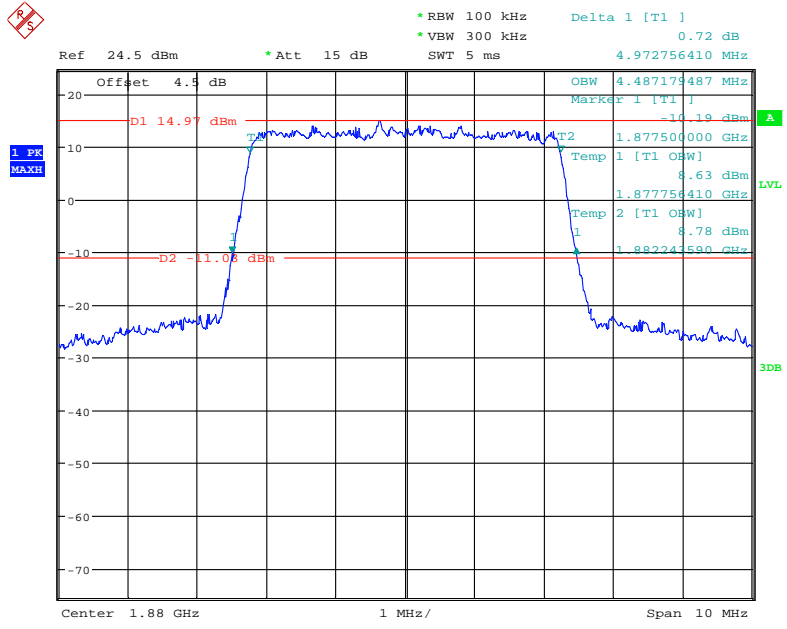
Date: 9.JAN.2018 14:38:45

**QPSK (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



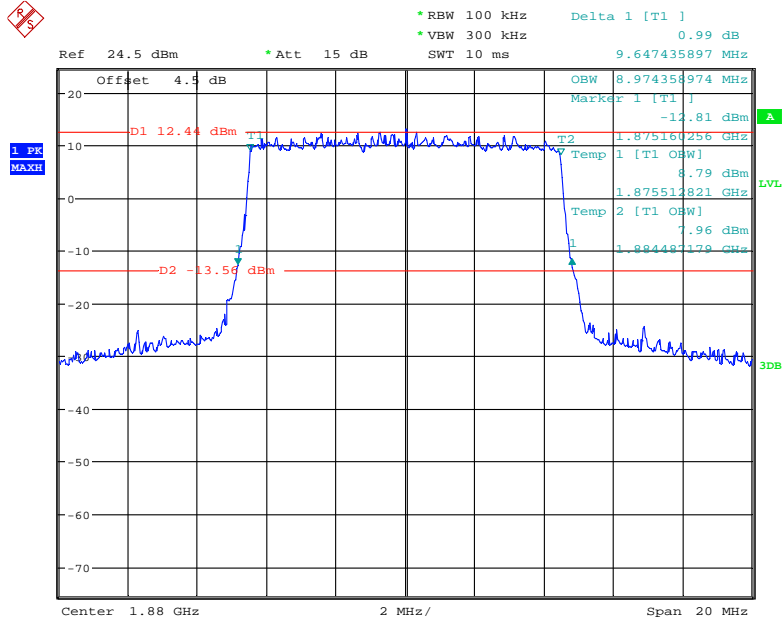
Date: 9.JAN.2018 14:42:48

**16-QAM (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



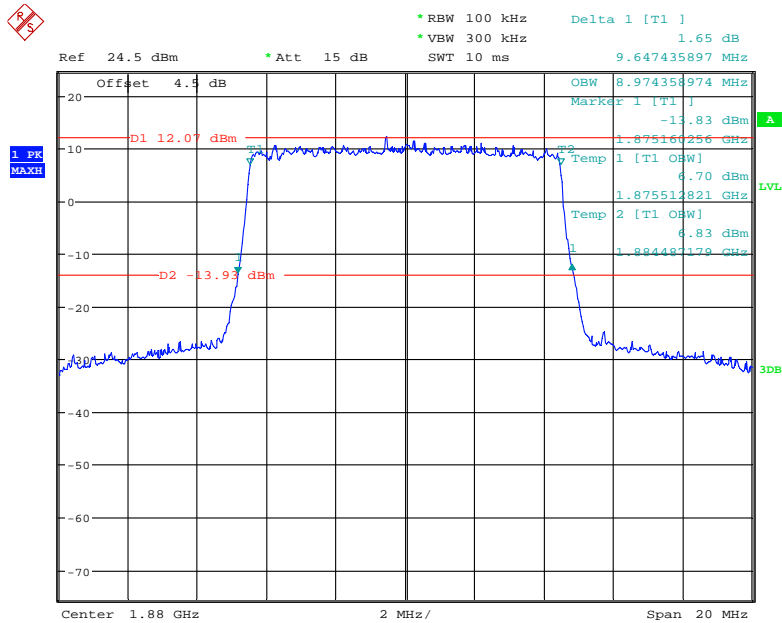
Date: 9.JAN.2018 14:44:09

**QPSK (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



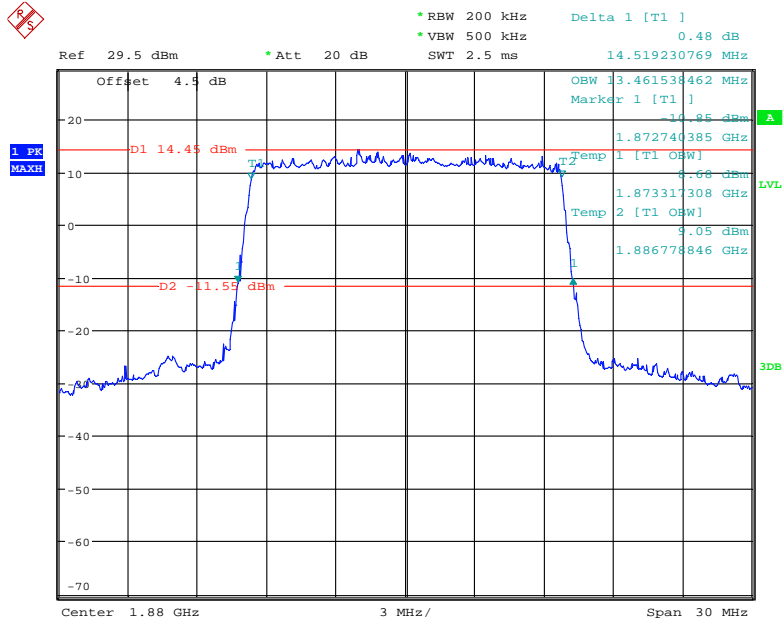
Date: 9.JAN.2018 14:48:59

**16-QAM (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



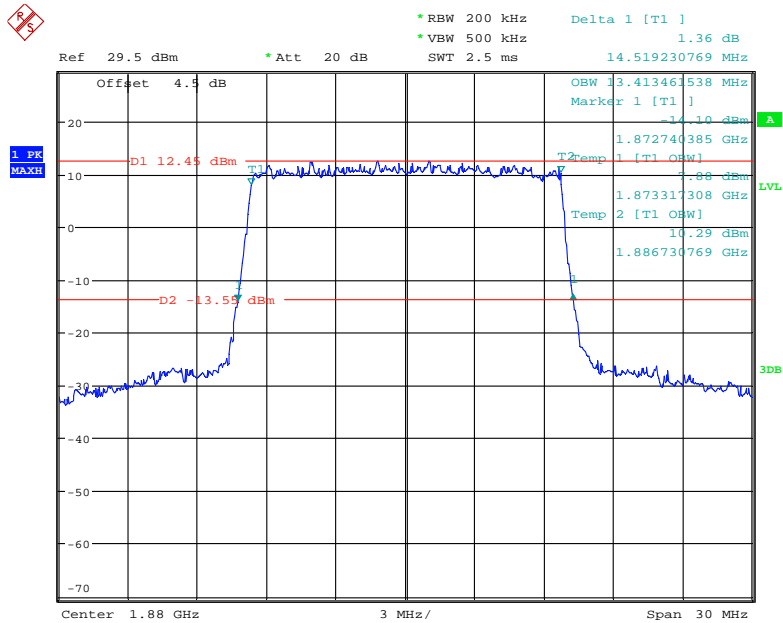
Date: 9.JAN.2018 14:47:55

**QPSK (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



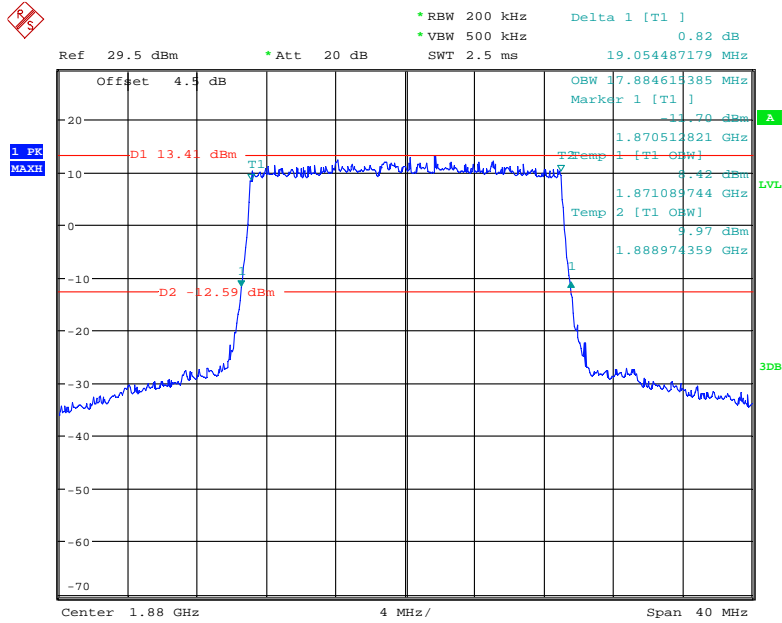
Date: 9.JAN.2018 16:05:33

**16-QAM (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



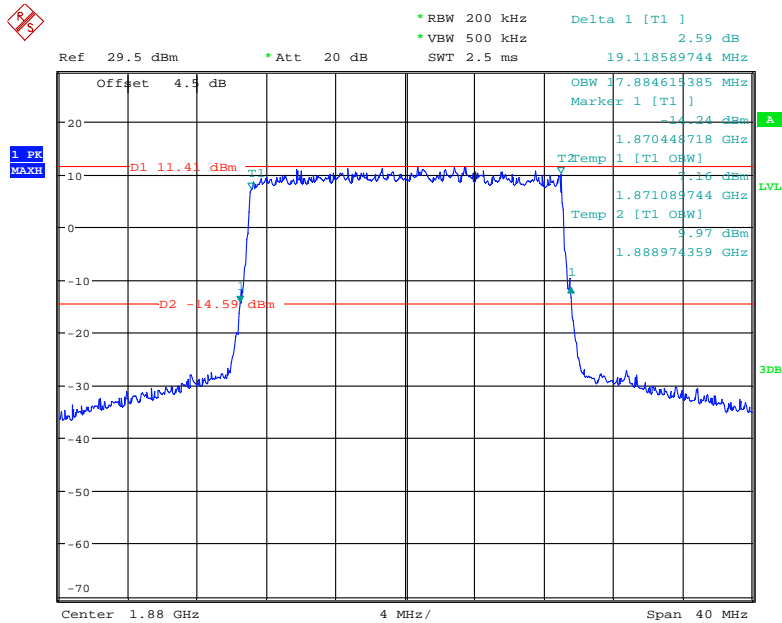
Date: 9.JAN.2018 16:04:33

### QPSK (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



Date: 9.JAN.2018 16:07:40

### 16-QAM (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



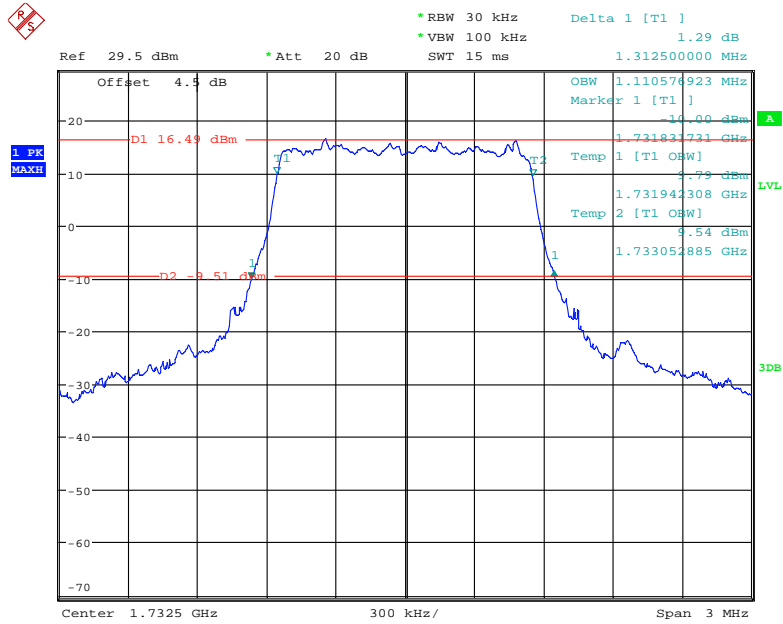
Date: 9.JAN.2018 16:06:43



**LTE Band 4: (Middle Channel)**

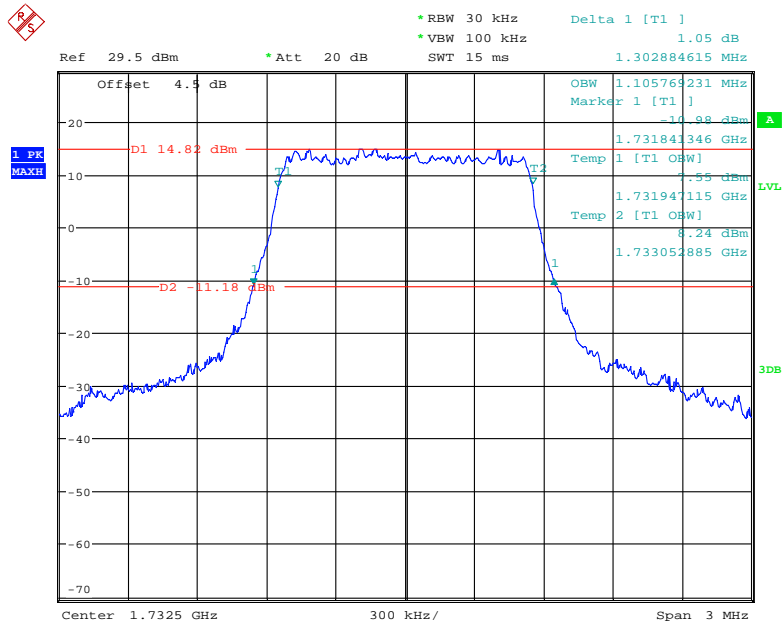
<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
1.4	QPSK	1.111	1.313
	16QAM	1.106	1.303
3.0	QPSK	2.692	2.923
	16QAM	2.702	2.952
5.0	QPSK	4.519	5.006
	16QAM	4.503	4.958
10.0	QPSK	8.974	9.808
	16QAM	8.942	9.615
15.0	QPSK	13.462	14.583
	16QAM	13.413	14.583
20.0	QPSK	17.885	19.119
	16QAM	17.949	19.183

**QPSK (1.4 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



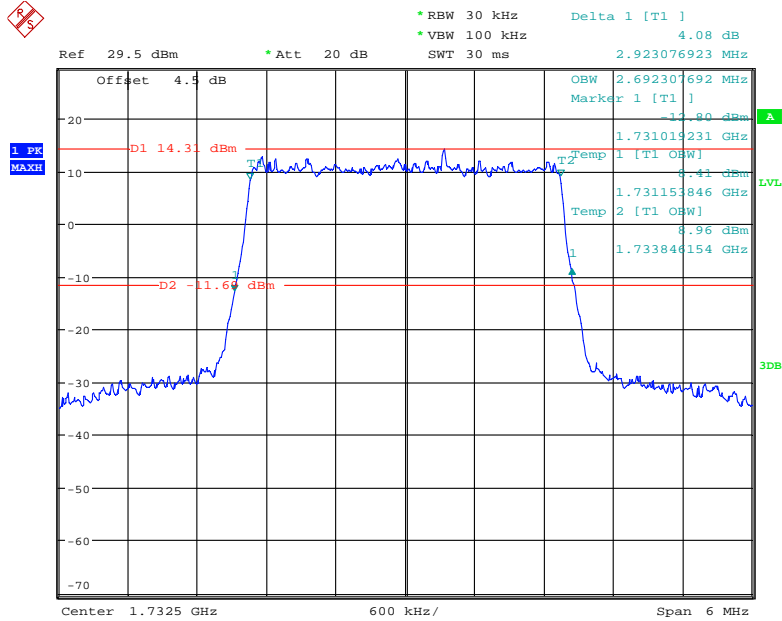
Date: 9.JAN.2018 16:21:02

**16-QAM (1.4 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



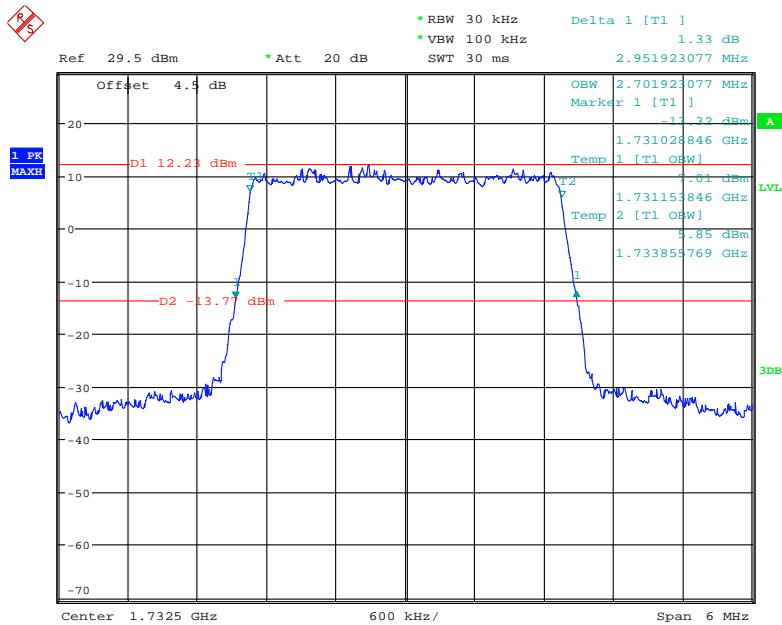
Date: 9.JAN.2018 16:22:09

**QPSK (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



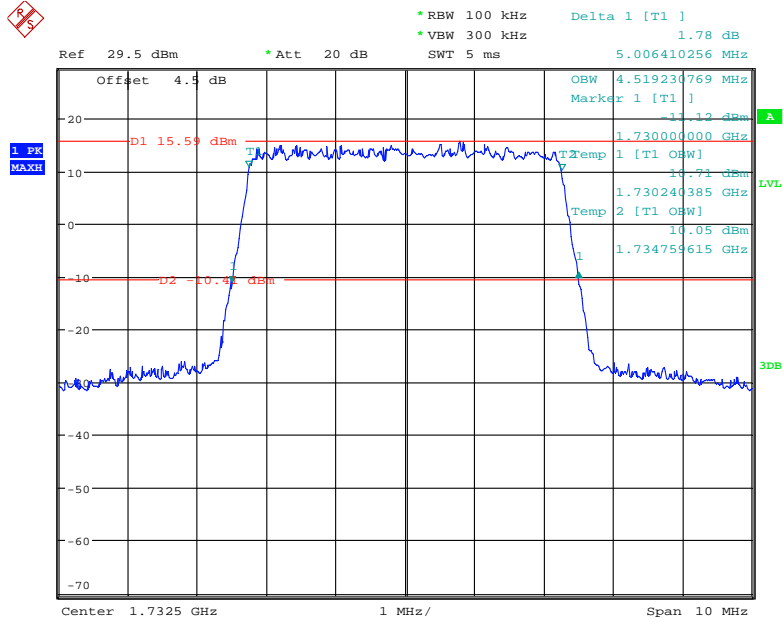
Date: 9.JAN.2018 16:23:32

**16-QAM (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



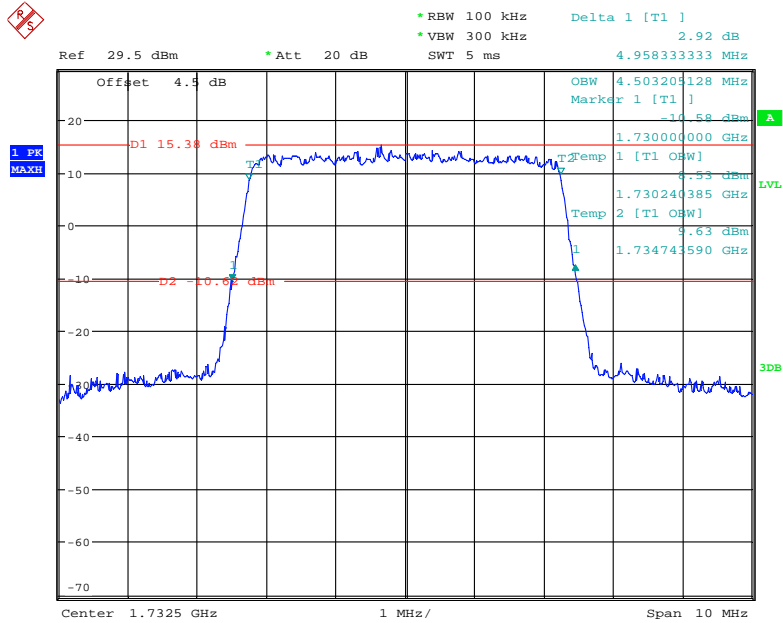
Date: 9.JAN.2018 16:24:32

**QPSK (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



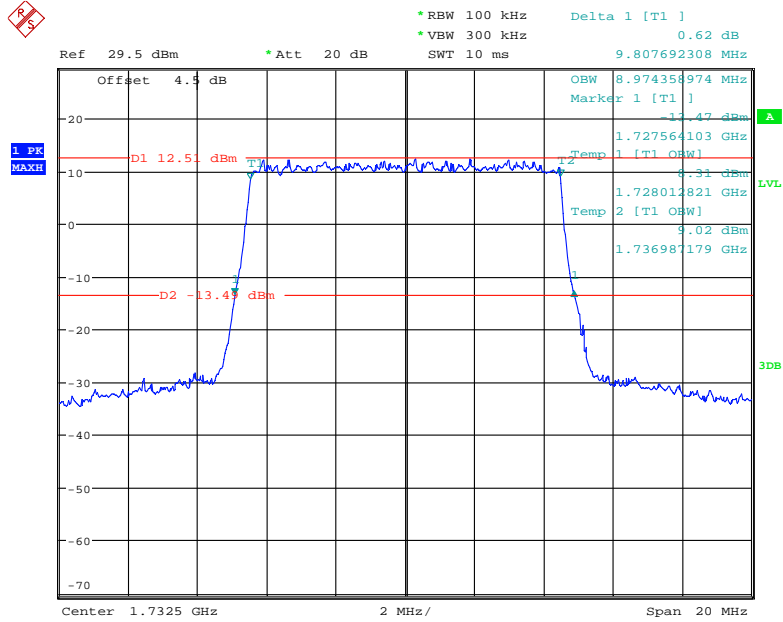
Date: 9.JAN.2018 16:27:03

**16-QAM (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



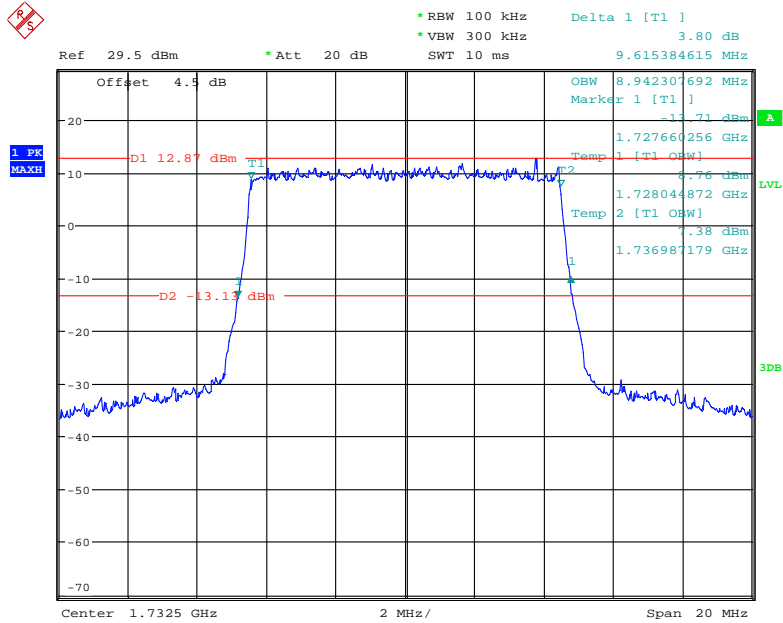
Date: 9.JAN.2018 16:25:59

**QPSK (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



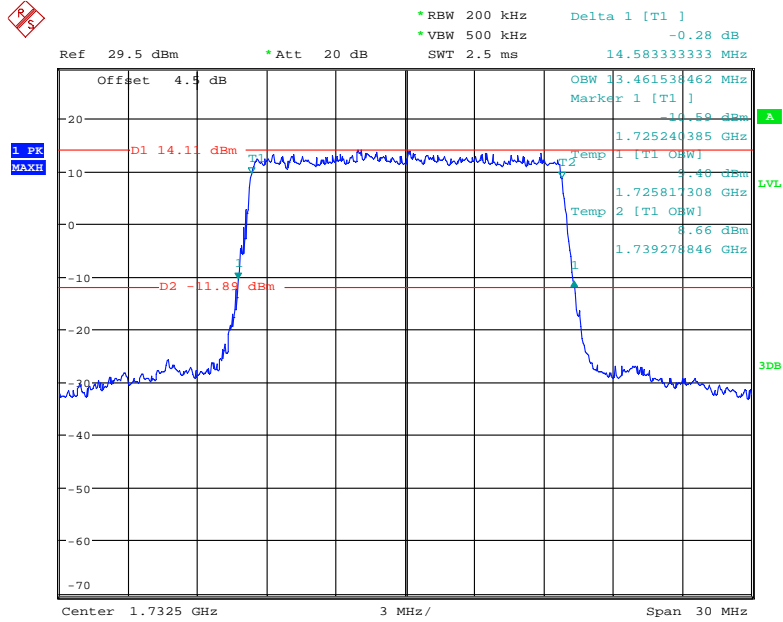
Date: 9.JAN.2018 16:29:23

**16-QAM (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



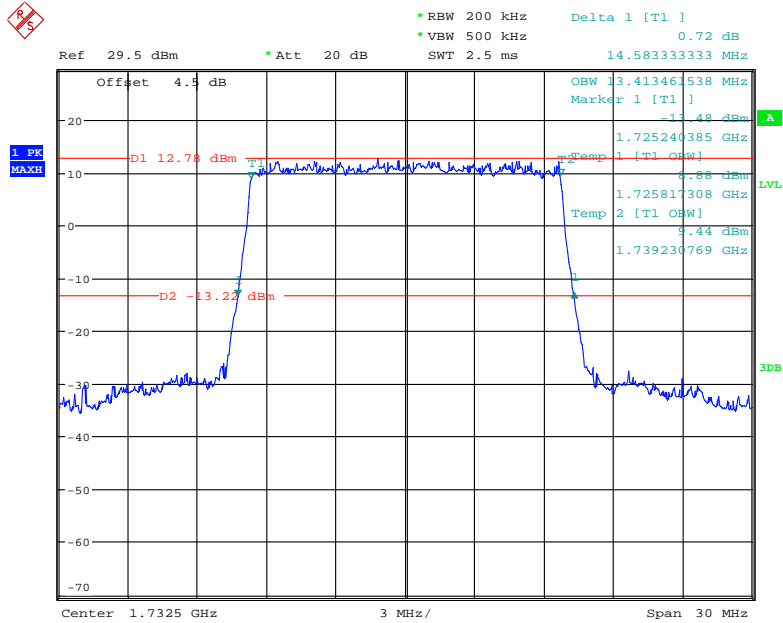
Date: 9.JAN.2018 16:31:04

**QPSK (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



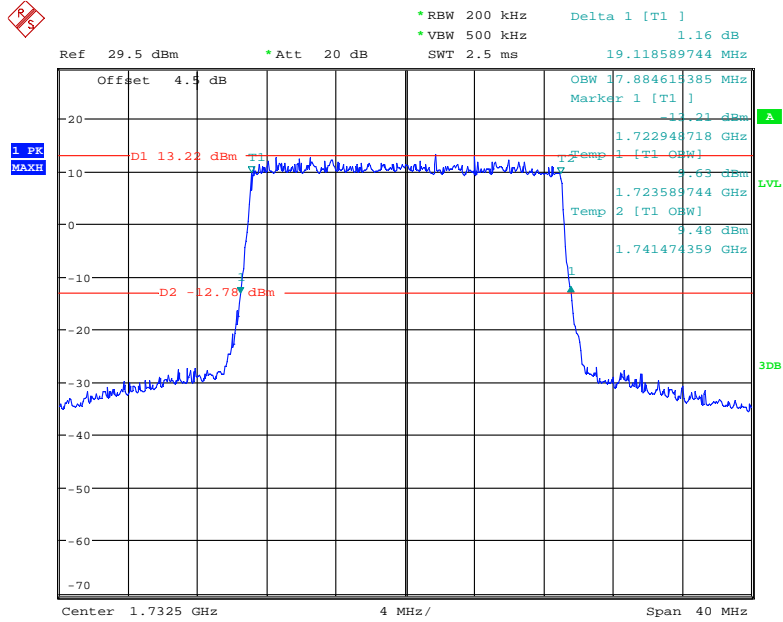
Date: 9.JAN.2018 16:33:46

**16-QAM (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



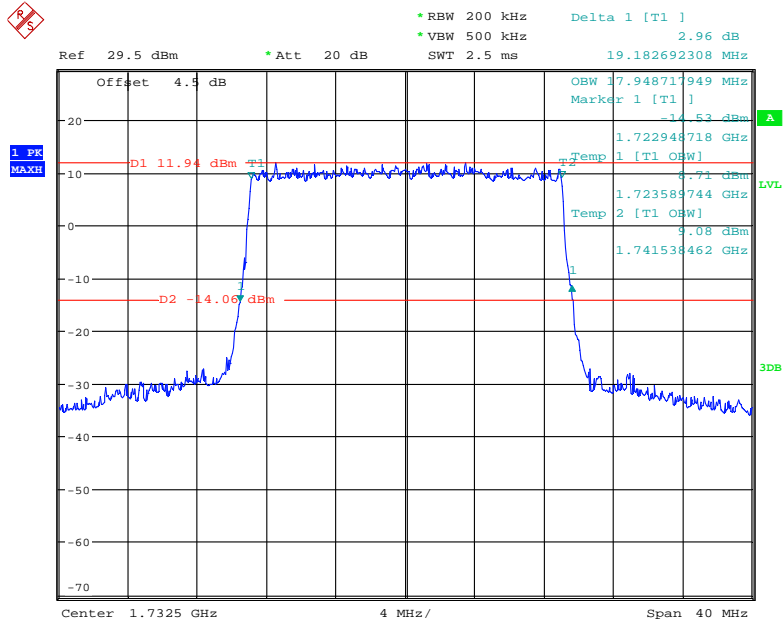
Date: 9.JAN.2018 16:34:53

**QPSK (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 9.JAN.2018 16:36:03

**16-QAM (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



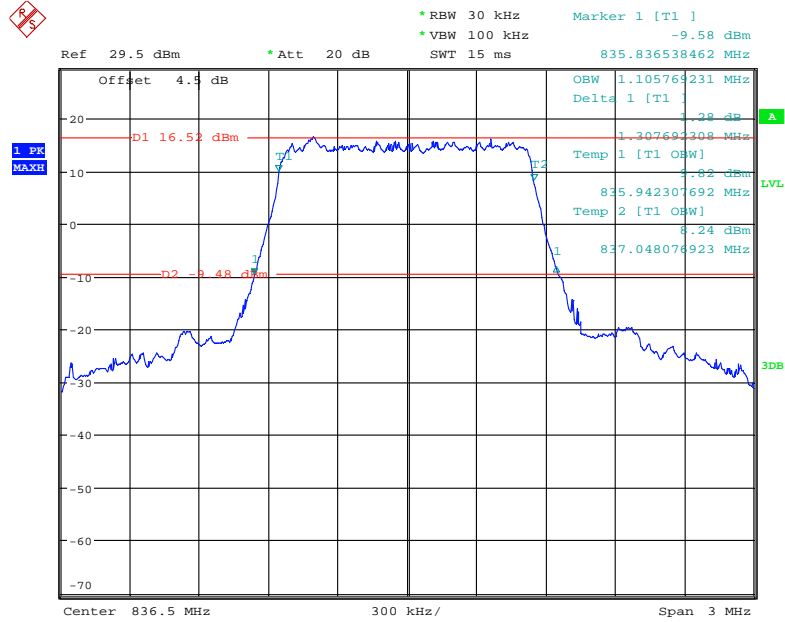
Date: 9.JAN.2018 16:37:19

**LTE Band 5: (Middle Channel)**

<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
1.4	QPSK	1.106	1.208
	16QAM	1.106	1.313
3.0	QPSK	2.702	2.933
	16QAM	2.702	2.912
5.0	QPSK	4.519	4.987
	16QAM	4.503	4.971
10.0	QPSK	8.974	9.715
	16QAM	8.942	9.619

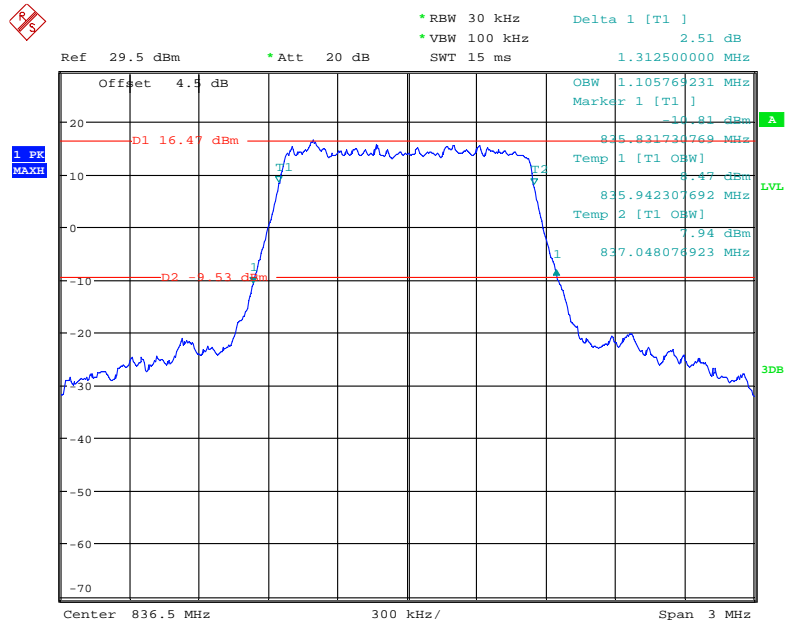


**QPSK (1.4 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



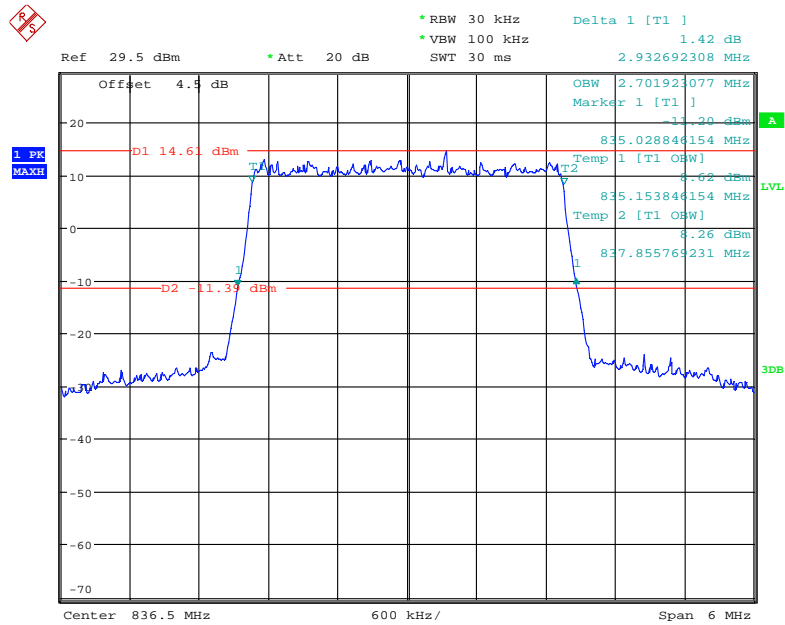
Date: 9.JAN.2018 16:48:05

**16-QAM (1.4 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



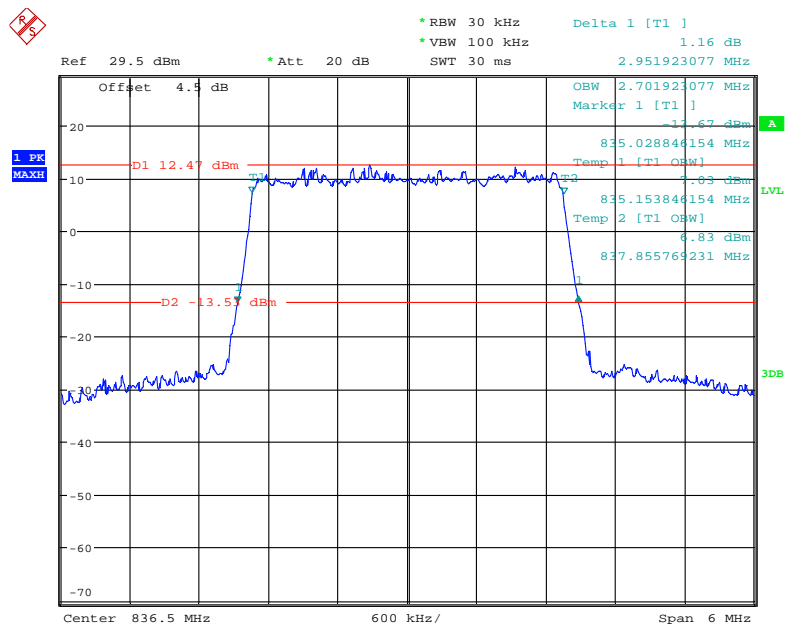
Date: 9.JAN.2018 16:46:38

**QPSK (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



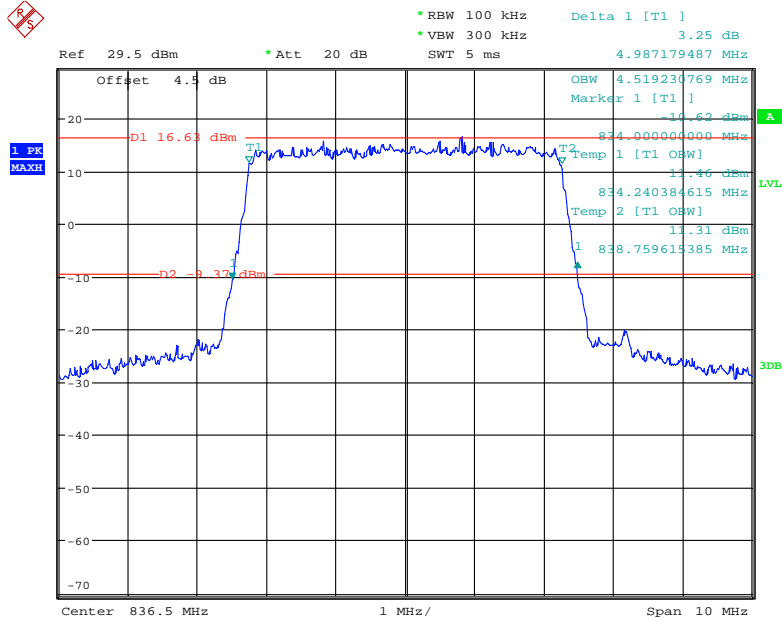
Date: 9.JAN.2018 16:55:22

**16-QAM (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



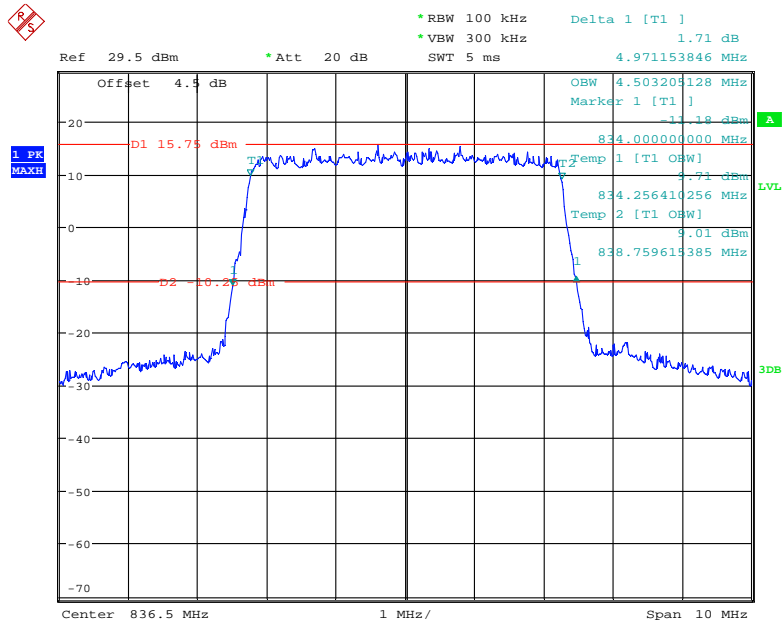
Date: 9.JAN.2018 16:54:25

### QPSK (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



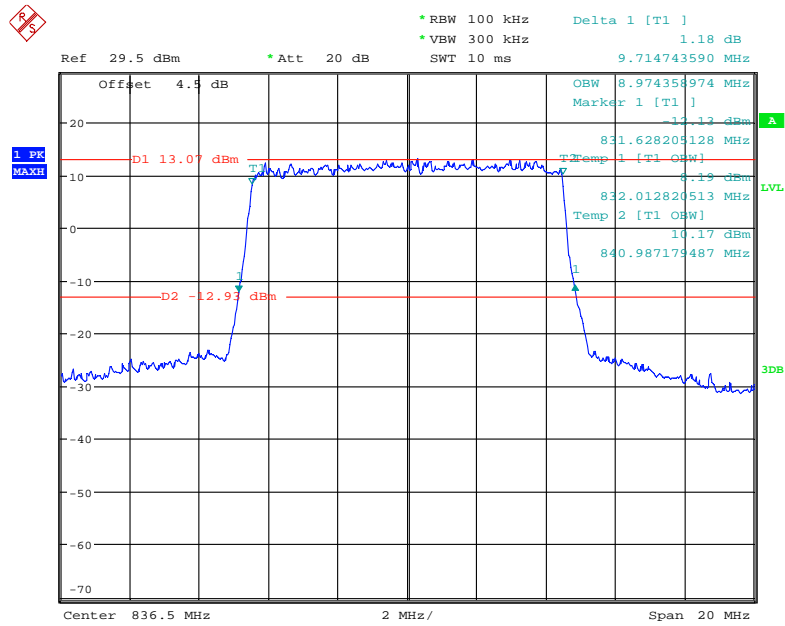
Date: 9.JAN.2018 16:56:56

### 16-QAM (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



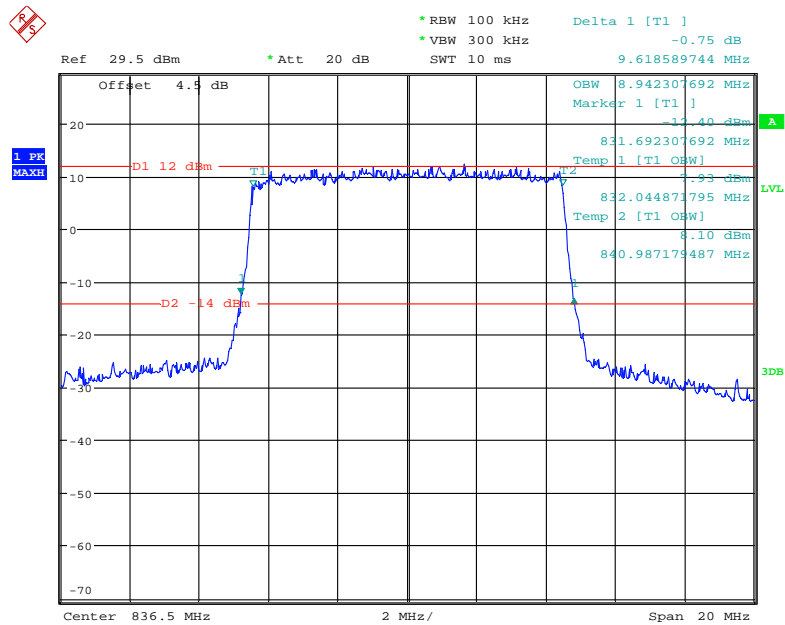
Date: 9.JAN.2018 16:58:04

**QPSK (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 9.JAN.2018 17:02:33

**16-QAM (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**

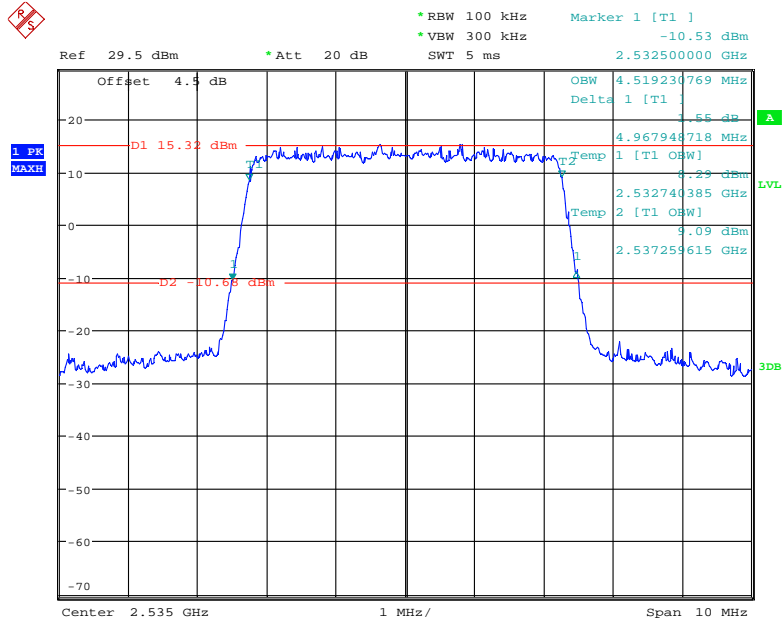


Date: 9.JAN.2018 17:00:07

**LTE BAND 7:**

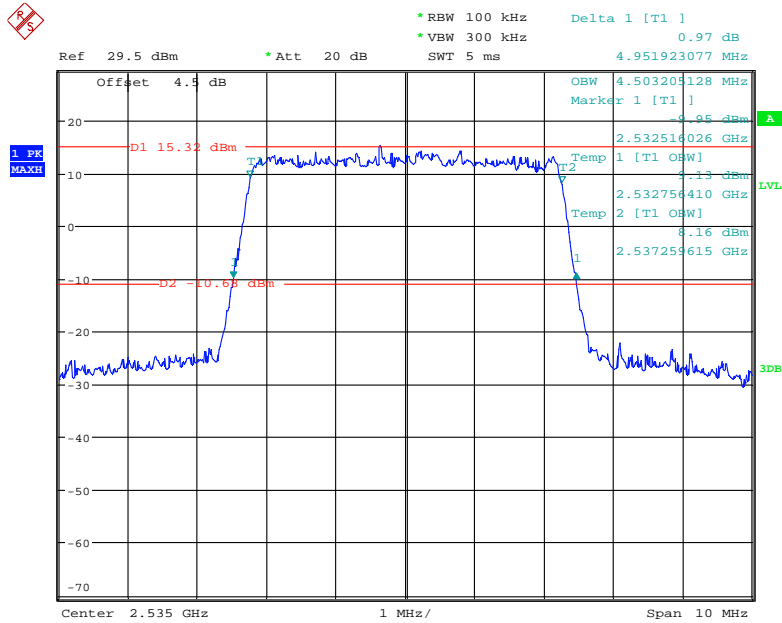
<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
5.0	QPSK	4.519	4.968
	16QAM	4.503	4.952
10.0	QPSK	8.974	9.712
	16QAM	8.974	9.647
15.0	QPSK	13.462	14.567
	16QAM	13.413	14.471
20.0	QPSK	17.885	19.038
	16QAM	17.885	19.167

### QPSK (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



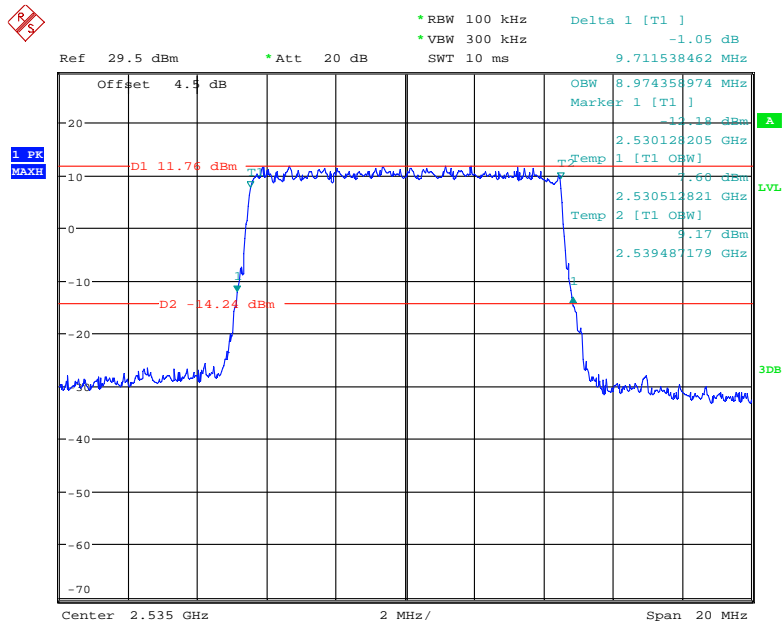
Date: 9.JAN.2018 17:06:37

### 16-QAM (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



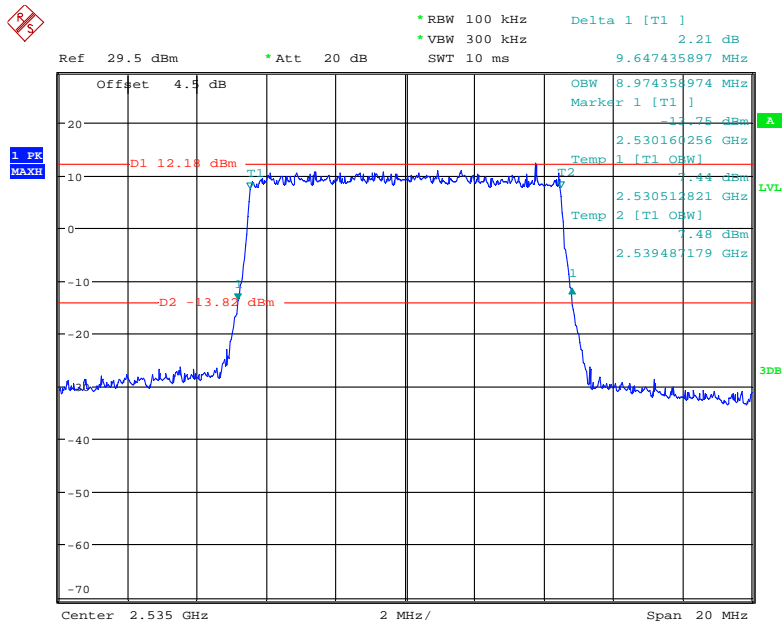
Date: 9.JAN.2018 17:05:33

**QPSK (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



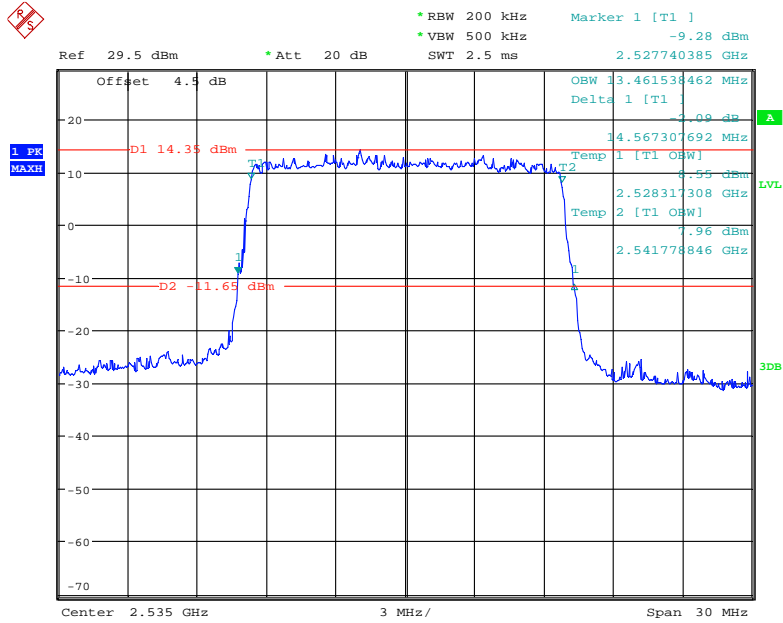
Date: 9.JAN.2018 17:08:02

**16-QAM (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



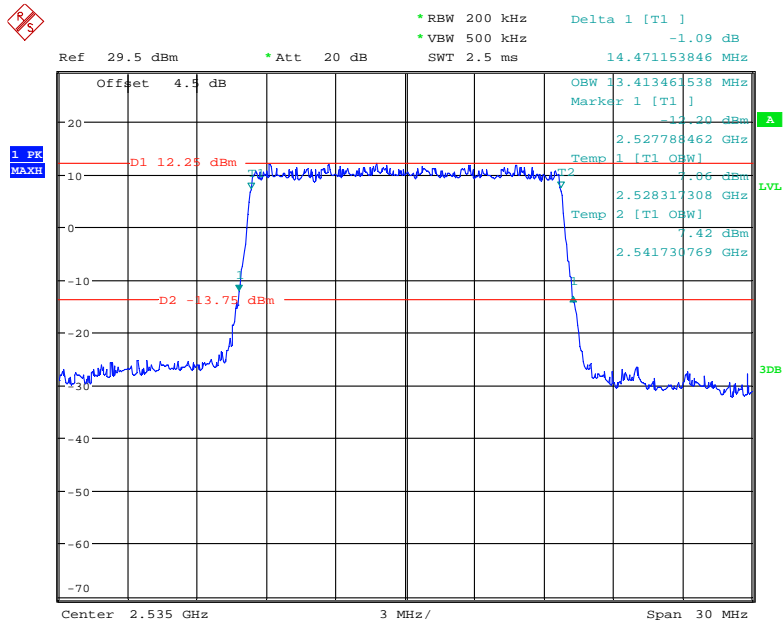
Date: 9.JAN.2018 17:08:50

**QPSK (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 9.JAN.2018 17:10:57

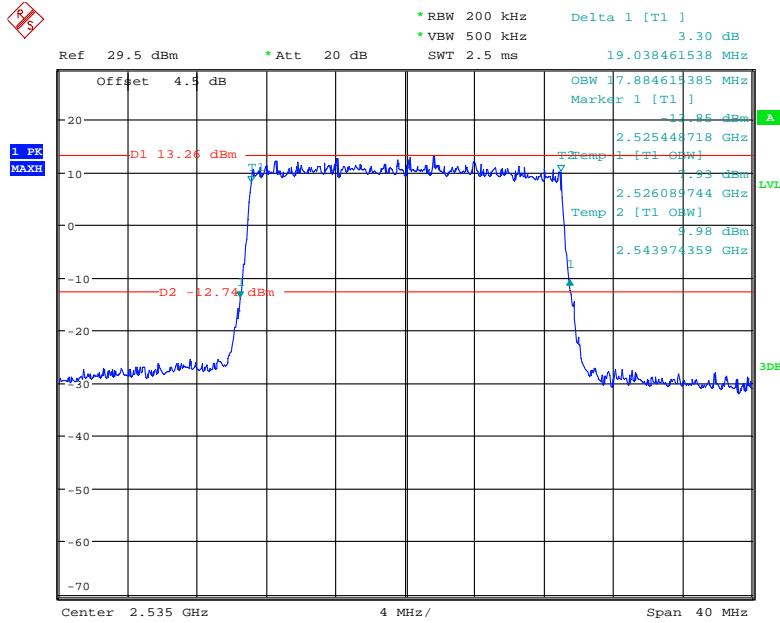
**16-QAM (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 9.JAN.2018 17:10:08

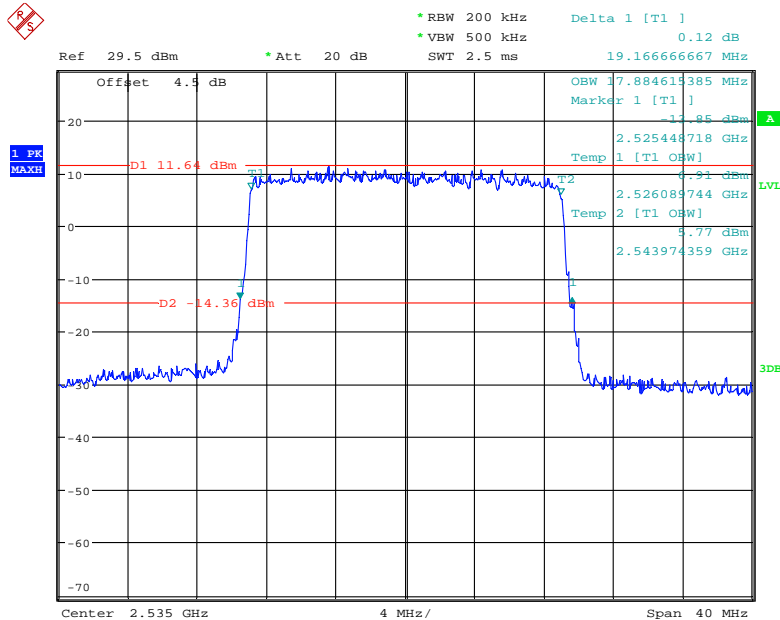


### QPSK (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



Date: 9.JAN.2018 17:13:05

### 16-QAM (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel

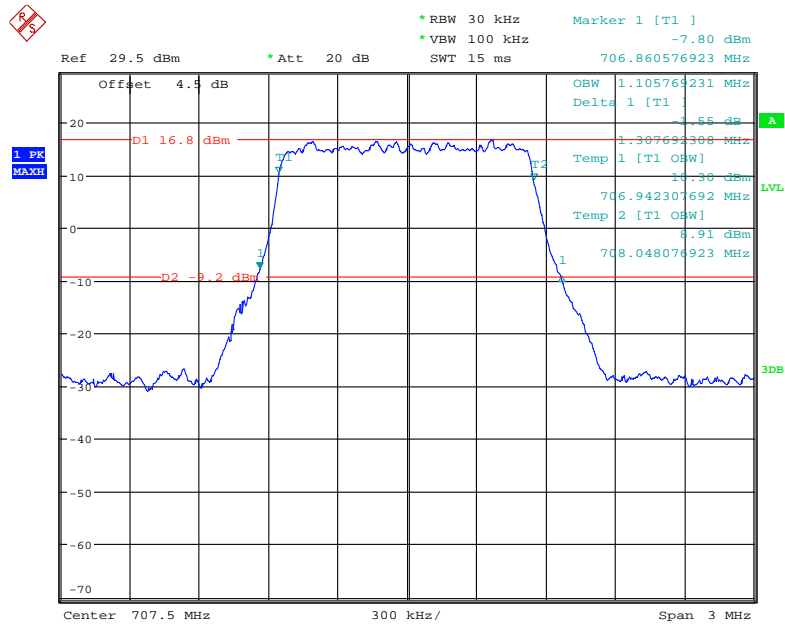


Date: 9.JAN.2018 17:12:00

## BAND12:

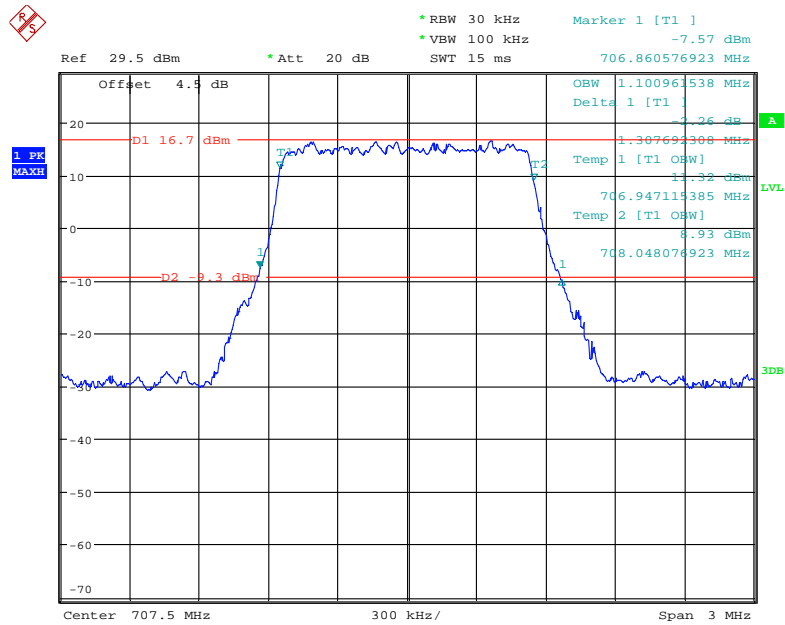
<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
1.4	QPSK	1.106	1.308
	16QAM	1.101	1.308
3.0	QPSK	2.692	2.939
	16QAM	2.692	2.958
5.0	QPSK	4.519	5.016
	16QAM	4.503	4.984
10.0	QPSK	8.942	9.776
	16QAM	8.942	9.674

**QPSK (1.4 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



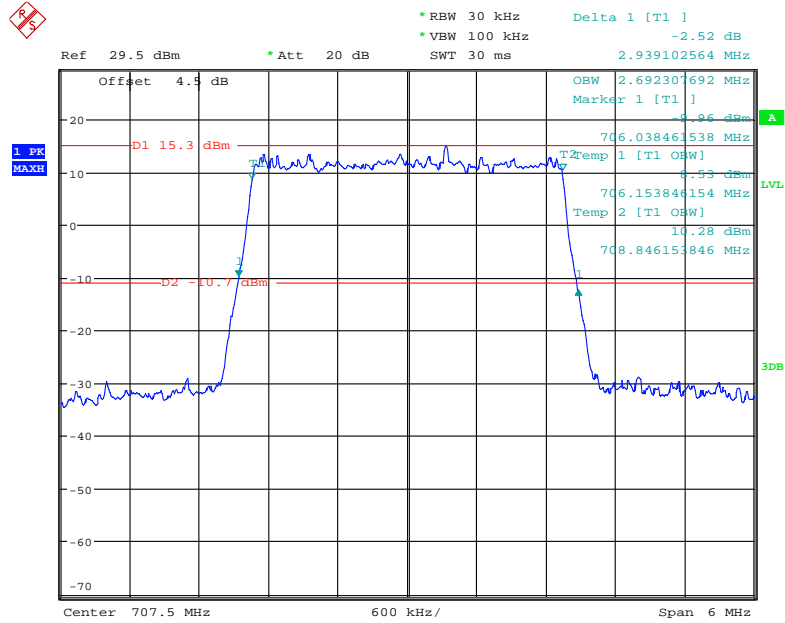
Date: 8.JAN.2018 17:22:13

**16-QAM (1.4 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



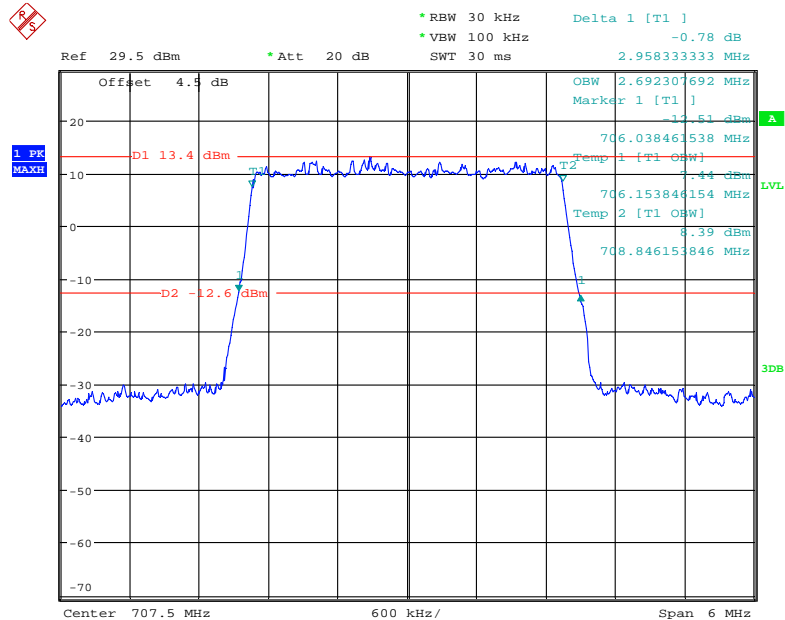
Date: 8.JAN.2018 17:19:30

**QPSK (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



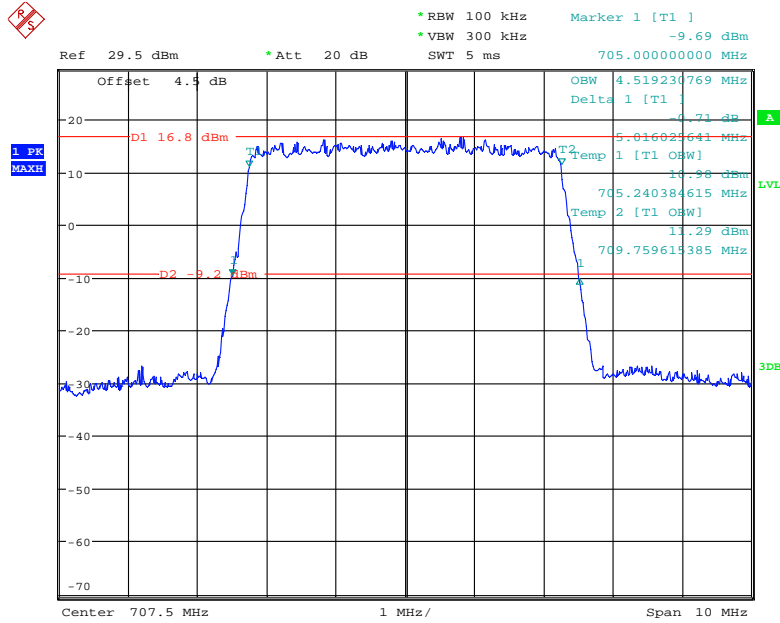
Date: 8.JAN.2018 17:17:02

**16-QAM (3.0MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



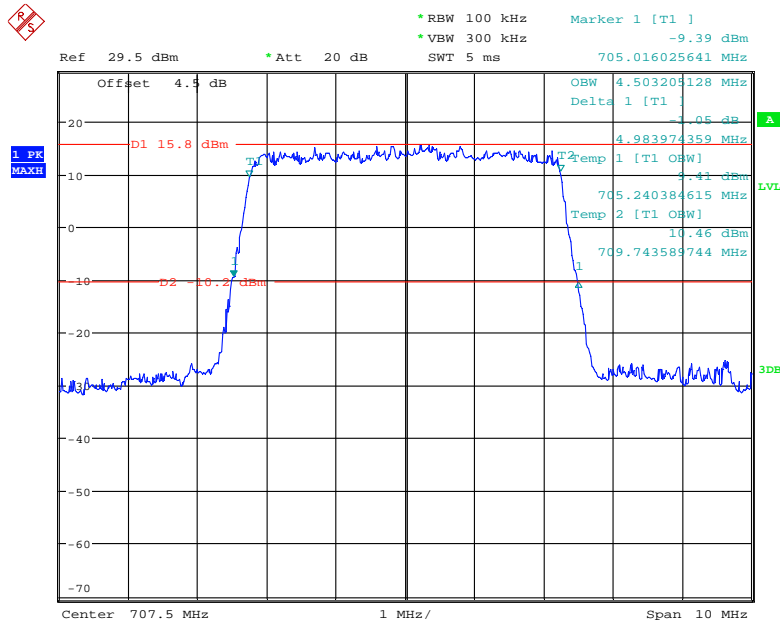
Date: 8.JAN.2018 17:18:03

**QPSK (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



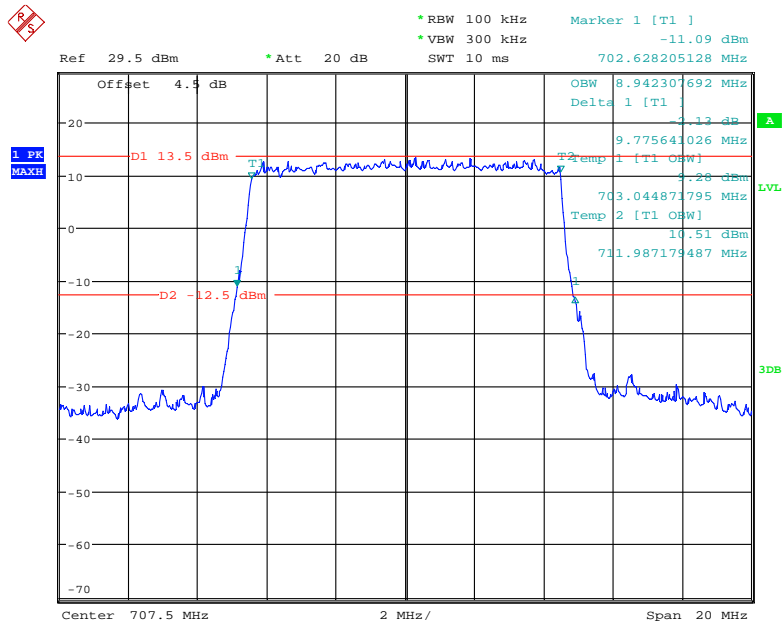
Date: 8.JAN.2018 17:14:06

**16-QAM (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



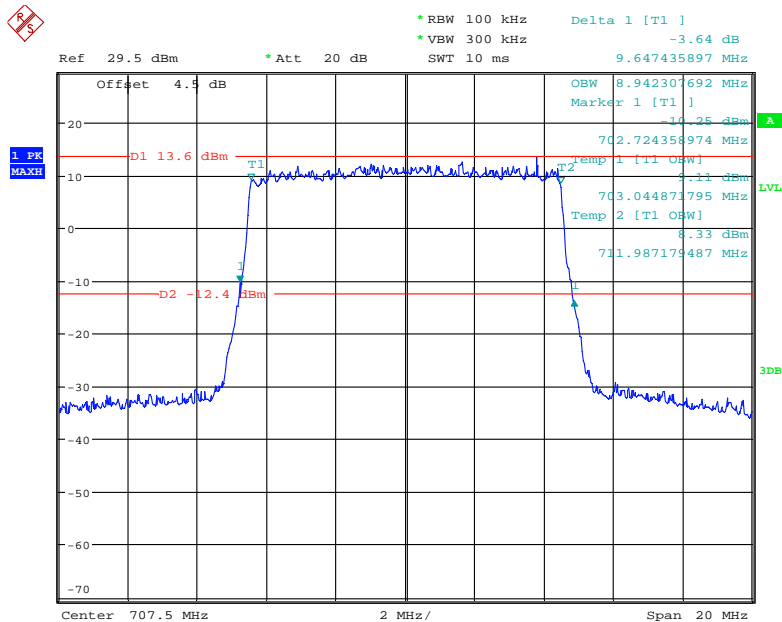
Date: 8.JAN.2018 17:13:13

**QPSK (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 8.JAN.2018 17:11:07

**16-QAM (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**

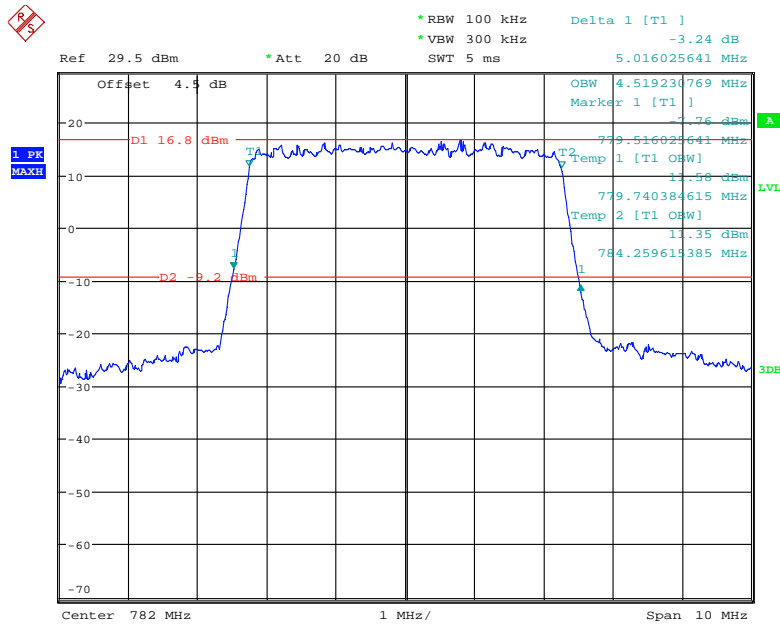


Date: 8.JAN.2018 17:12:02

**LTE BAND 13:**

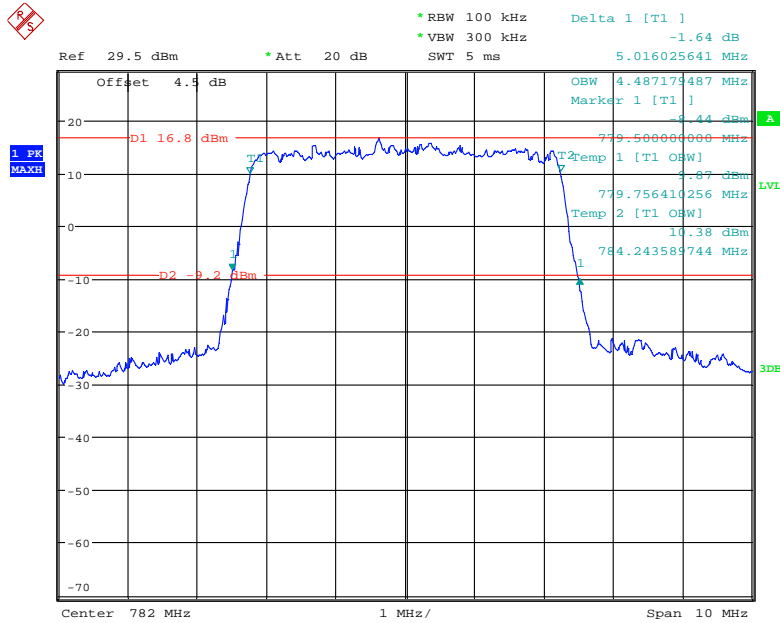
<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
5.0	QPSK	4.519	5.016
	16QAM	4.487	5.016
10.0	QPSK	8.942	9.680
	16QAM	8.942	9.647

**QPSK (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 8.JAN.2018 17:06:08

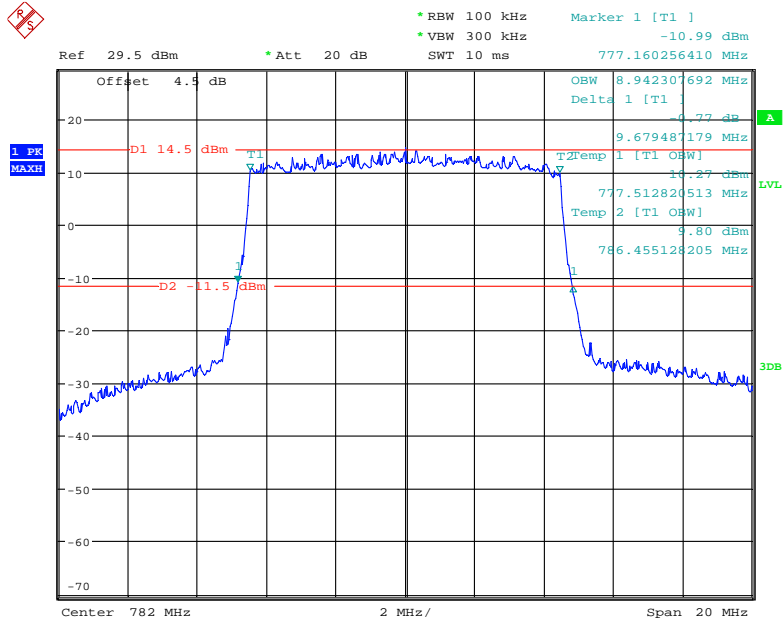
**16-QAM (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 8.JAN.2018 17:07:13

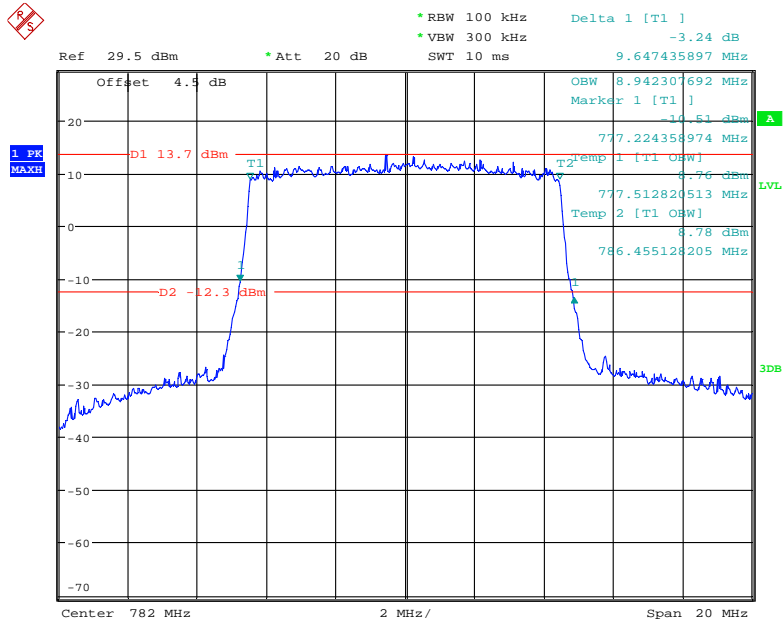


### QPSK (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



Date: 8.JAN.2018 17:05:03

### 16-QAM (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel

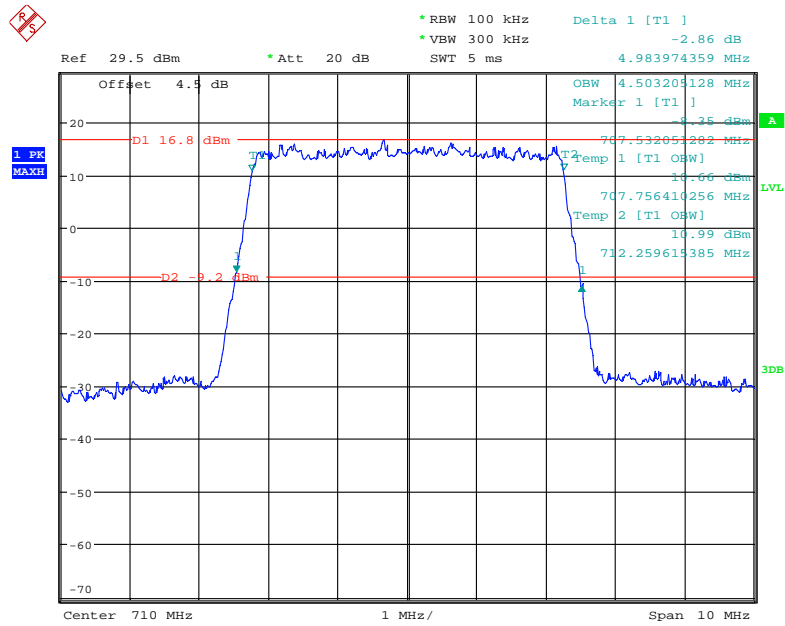


Date: 8.JAN.2018 17:04:09

**LTE BAND 17:**

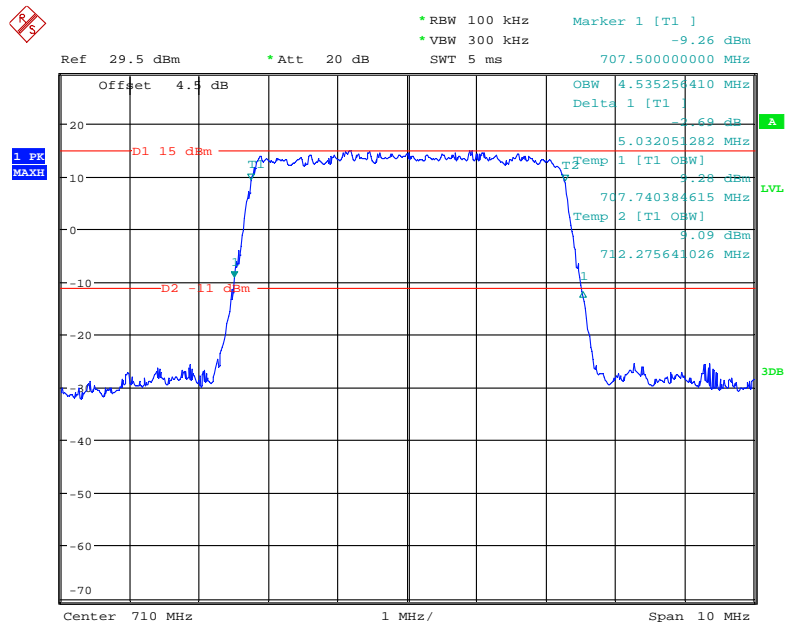
<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
5.0	QPSK	4.503	4.984
	16QAM	4.535	5.032
10.0	QPSK	8.974	9.792
	16QAM	8.942	9.696

**QPSK (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



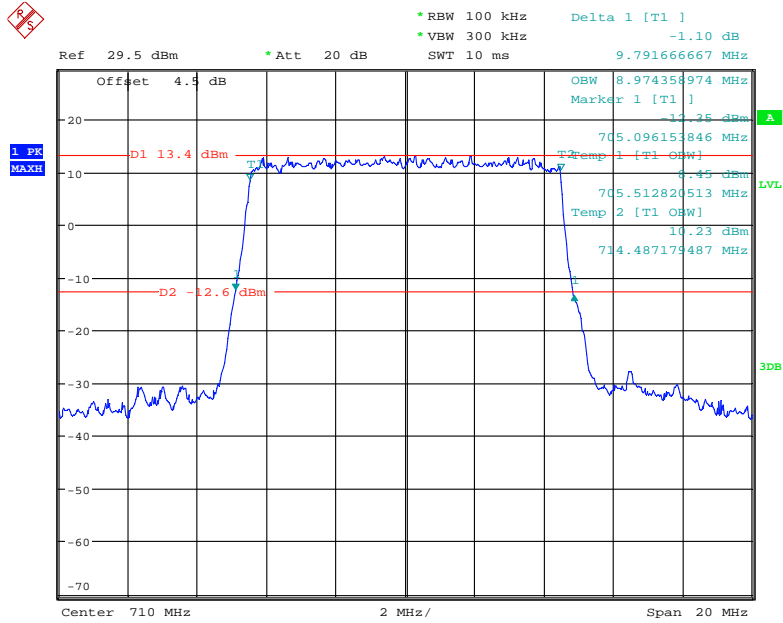
Date: 8.JAN.2018 17:00:00

**16-QAM (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



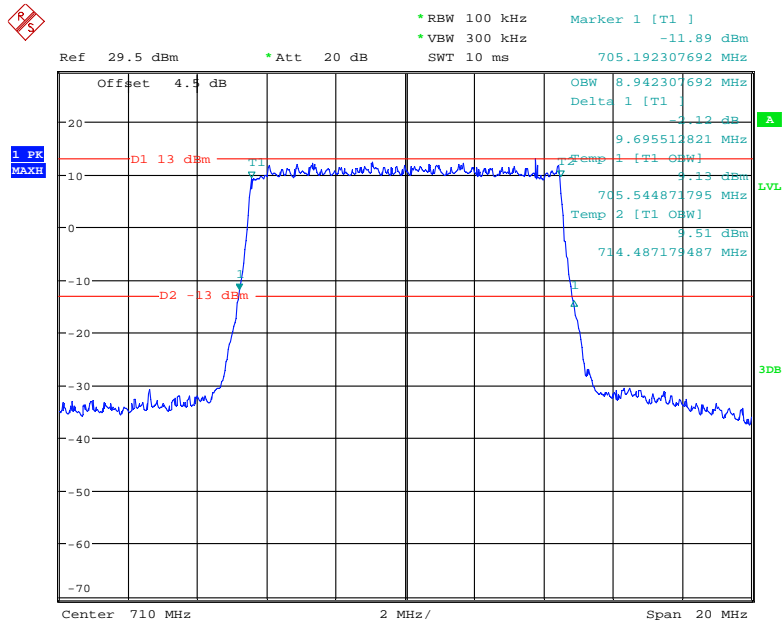
Date: 8.JAN.2018 16:59:19

### QPSK (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



Date: 8.JAN.2018 17:02:00

### 16-QAM (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel

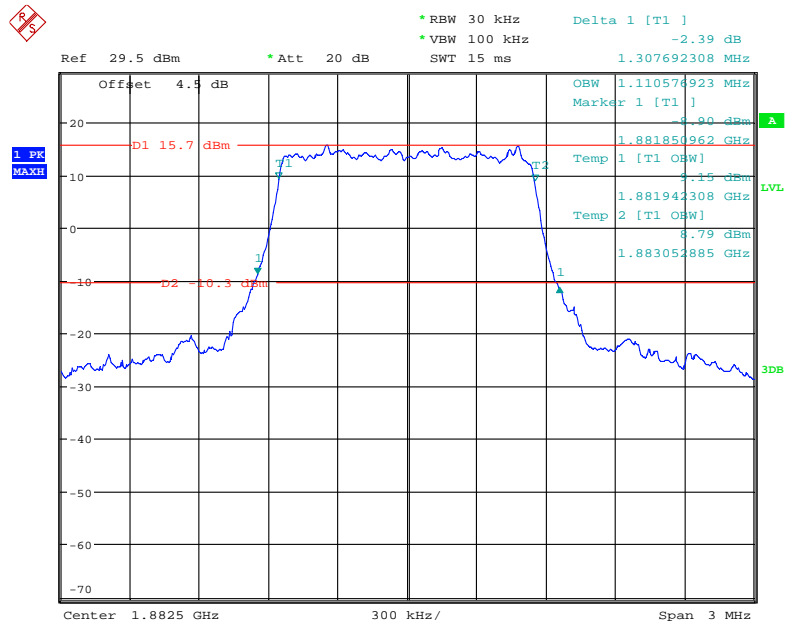


Date: 8.JAN.2018 17:02:56

**LTE Band 25: (Middle Channel)**

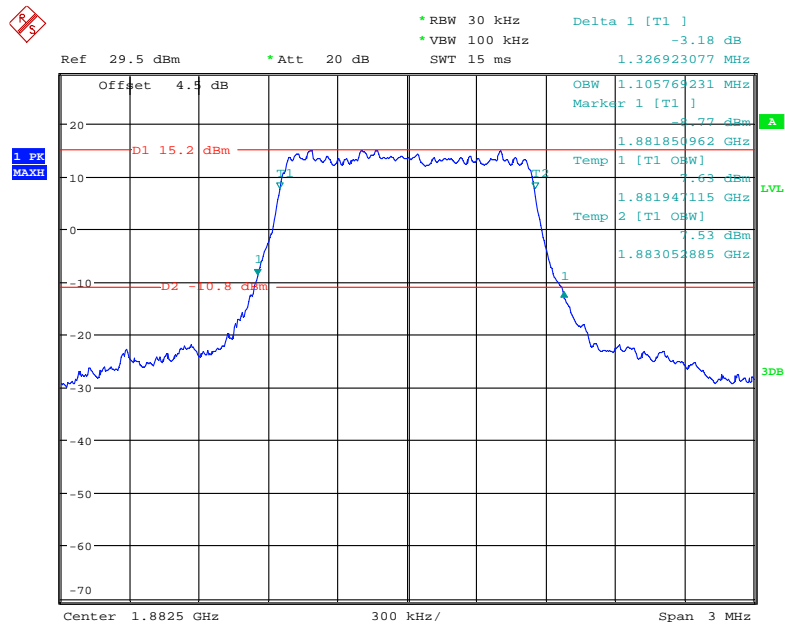
<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
1.4	QPSK	1.111	1.308
	16QAM	1.106	1.327
3.0	QPSK	2.692	2.942
	16QAM	2.692	2.971
5.0	QPSK	4.519	5.010
	16QAM	4.519	4.994
10.0	QPSK	8.974	1.878
	16QAM	8.938	9.659
15.0	QPSK	13.413	14.625
	16QAM	13.413	14.561
20.0	QPSK	17.885	19.112
	16QAM	17.949	19.176

**QPSK (1.4 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



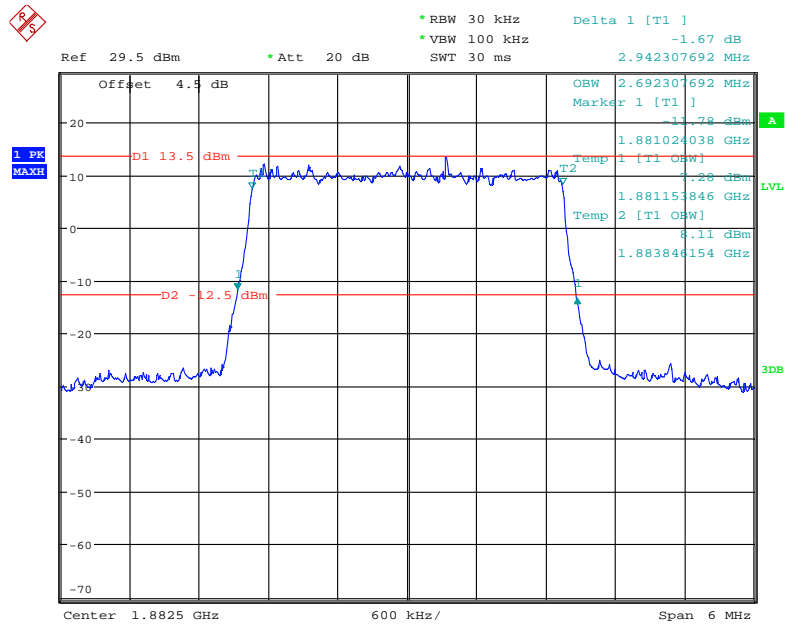
Date: 8.JAN.2018 16:12:43

**16-QAM (1.4 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



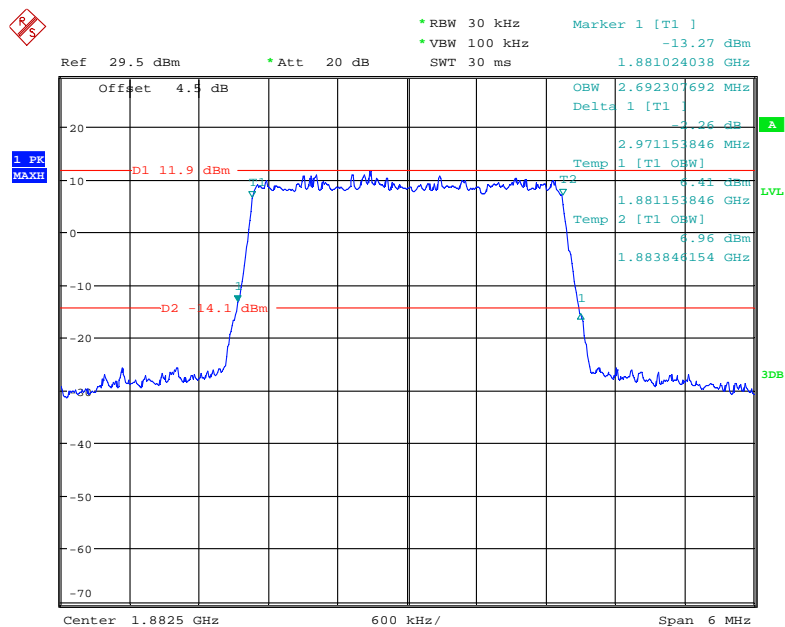
Date: 8.JAN.2018 16:10:24

**QPSK (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



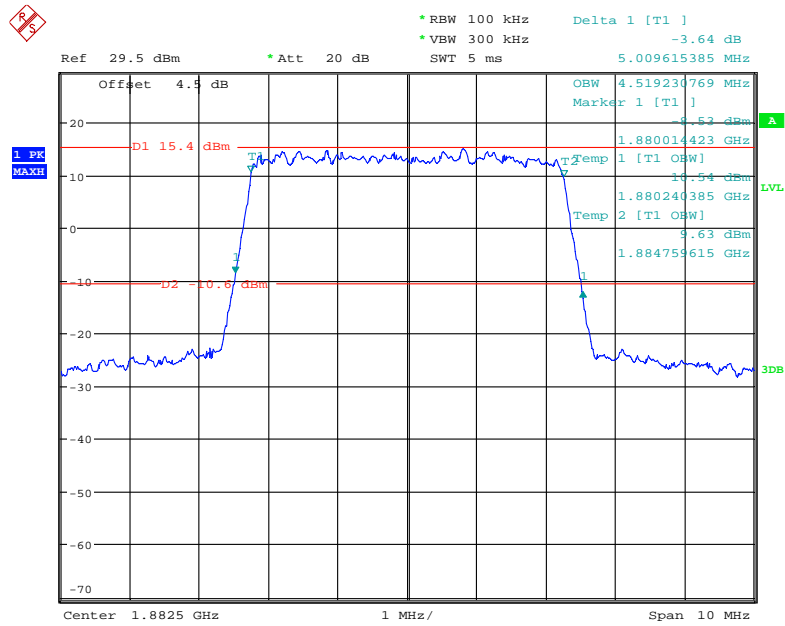
Date: 8.JAN.2018 16:14:36

**16-QAM (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



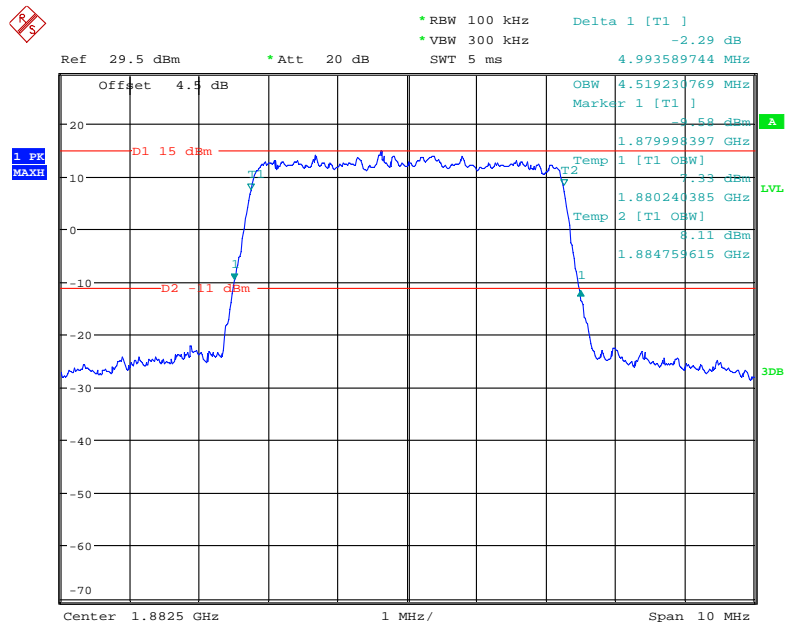
Date: 8.JAN.2018 16:13:49

**QPSK (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 8.JAN.2018 16:17:05

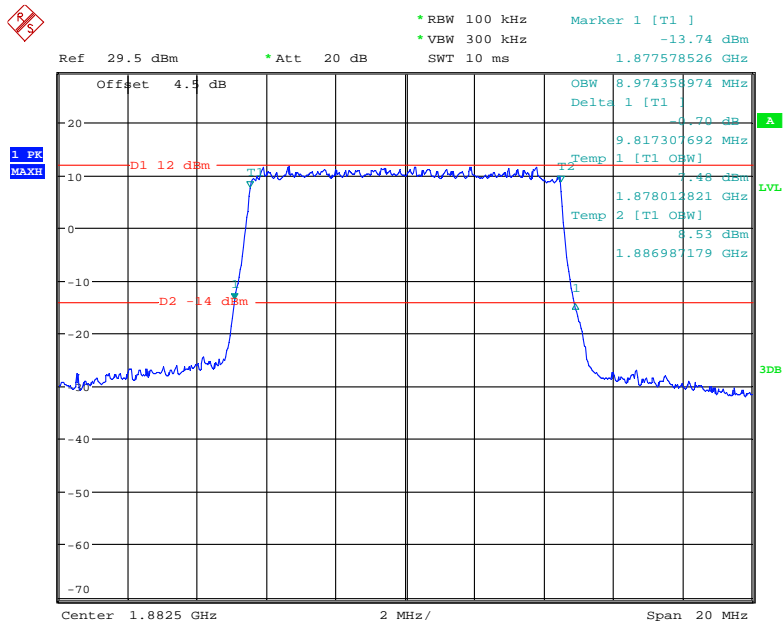
**16-QAM (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 8.JAN.2018 16:16:00

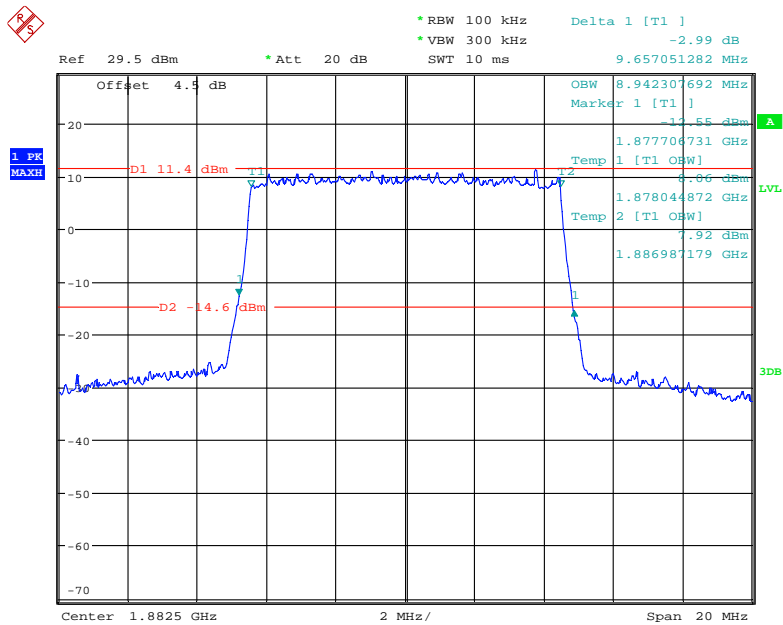


**QPSK (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



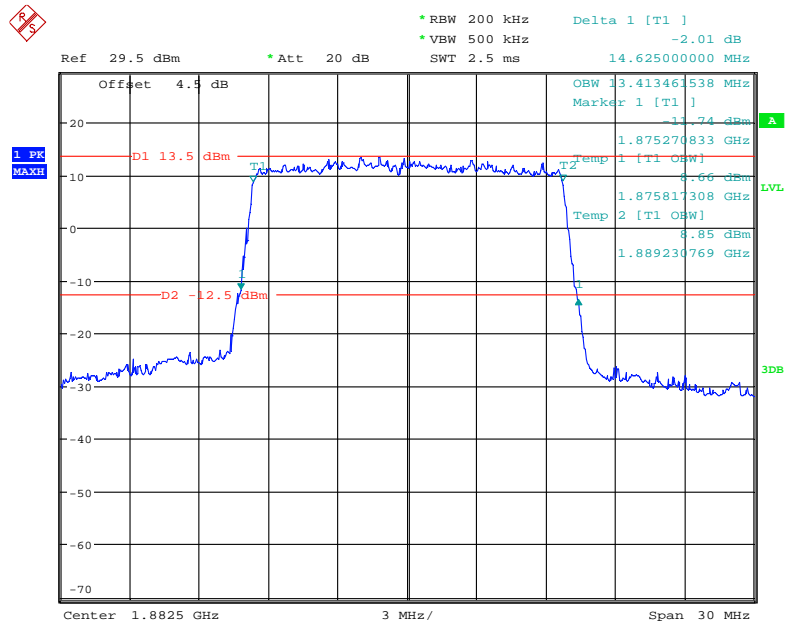
Date: 8.JAN.2018 16:20:24

**16-QAM (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



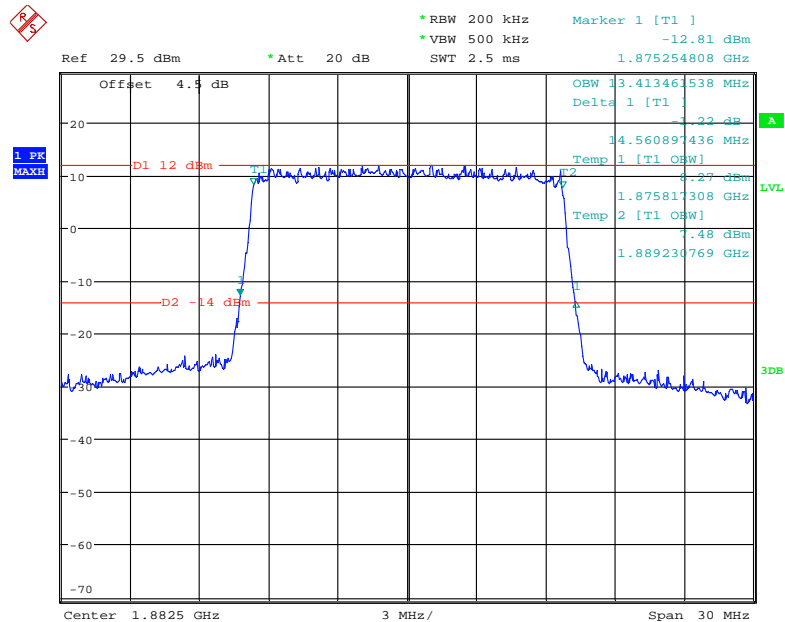
Date: 8.JAN.2018 16:19:15

**QPSK (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



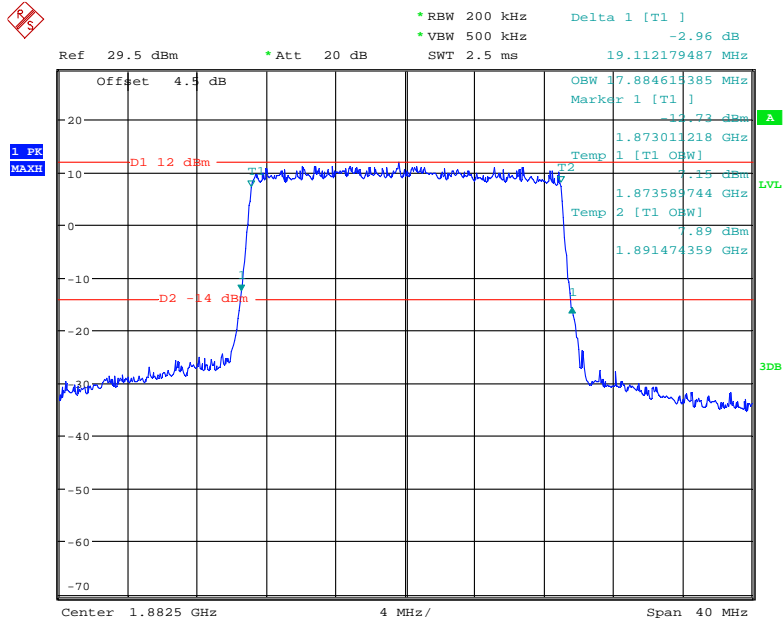
Date: 8.JAN.2018 16:22:18

**16-QAM (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



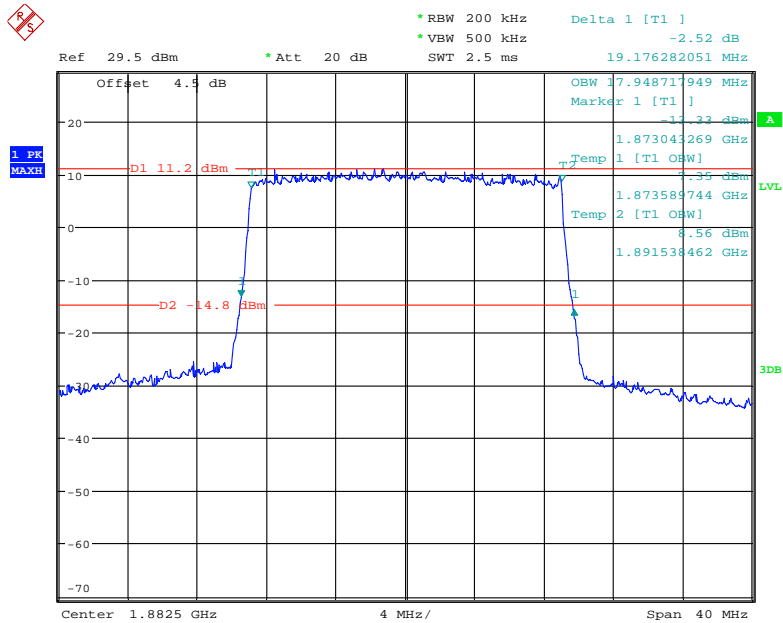
Date: 8.JAN.2018 16:25:57

### QPSK (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



Date: 8.JAN.2018 16:26:39

### 16-QAM (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel

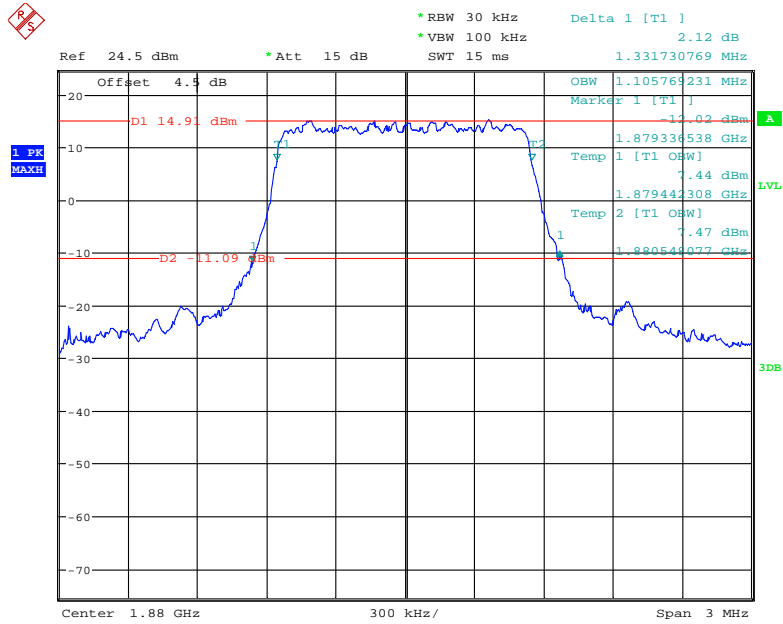


Date: 8.JAN.2018 16:25:13

**LTE Band 2: (Middle Channel)**

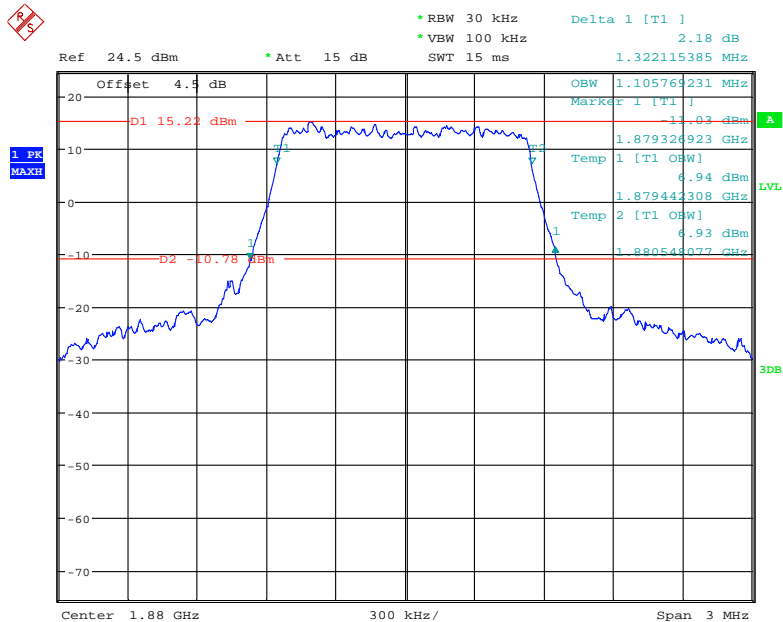
<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
1.4	QPSK	1.106	1.332
	16QAM	1.106	1.322
3.0	QPSK	2.692	2.918
	16QAM	2.702	2.966
5.0	QPSK	4.519	5.005
	16QAM	4.487	4.973
10.0	QPSK	8.974	9.647
	16QAM	8.974	9.647
15.0	QPSK	13.462	14.519
	16QAM	13.413	14.519
20.0	QPSK	17.885	19.054
	16QAM	17.885	19.119

**QPSK (1.4 MHz) -26 dB Emissions &99% Occupied Bandwidth, Middle channel**



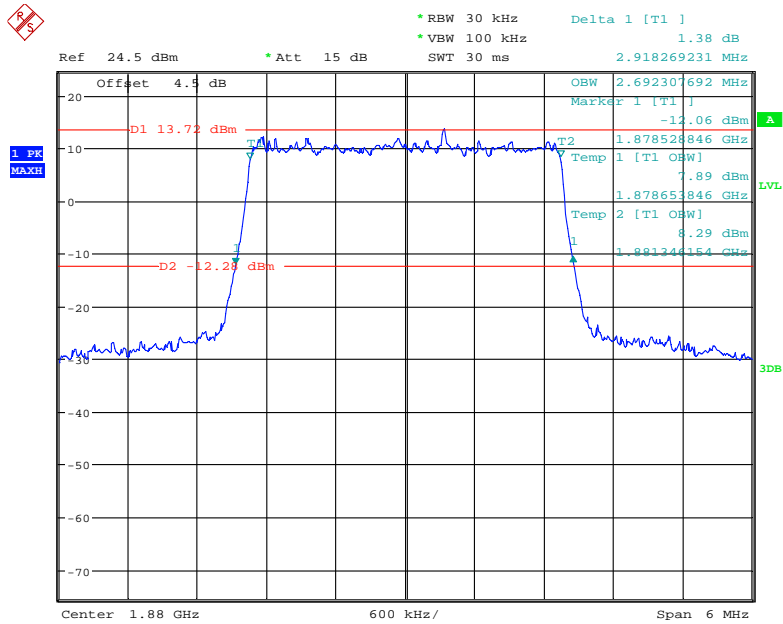
Date: 9.JAN.2018 14:36:35

**16-QAM (1.4 MHz) - 26 dB Emissions &99% Occupied Bandwidth, Middle channel**



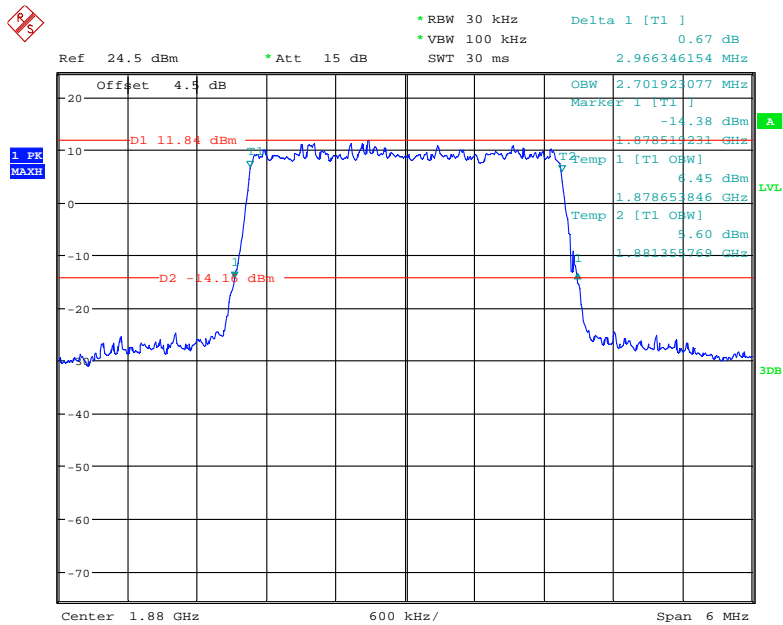
Date: 9.JAN.2018 14:34:08

**QPSK (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



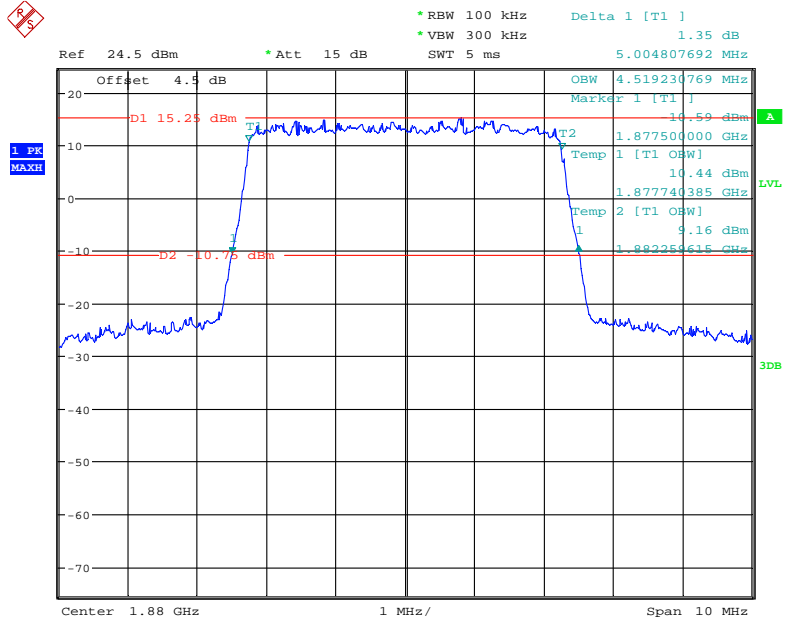
Date: 9.JAN.2018 14:40:51

**16-QAM (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



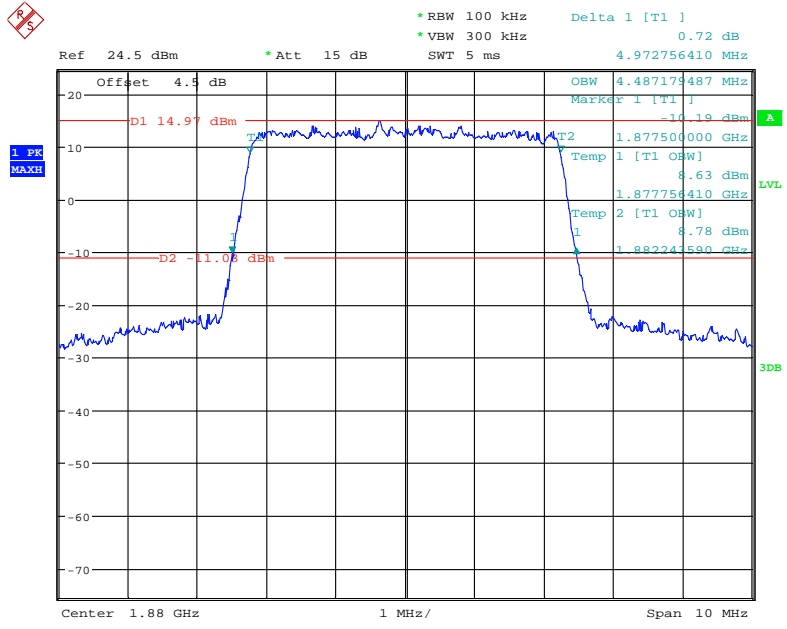
Date: 9.JAN.2018 14:38:45

**QPSK (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



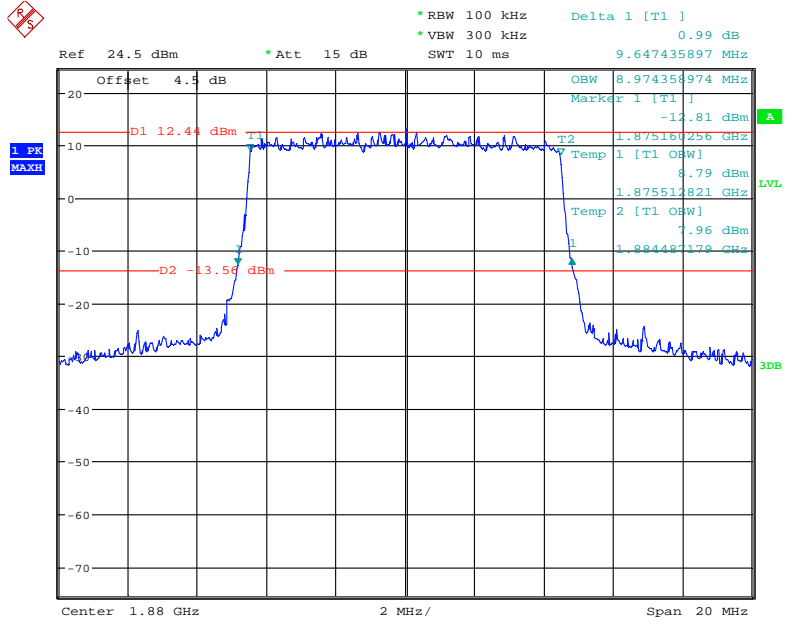
Date: 9.JAN.2018 14:42:48

**16-QAM (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



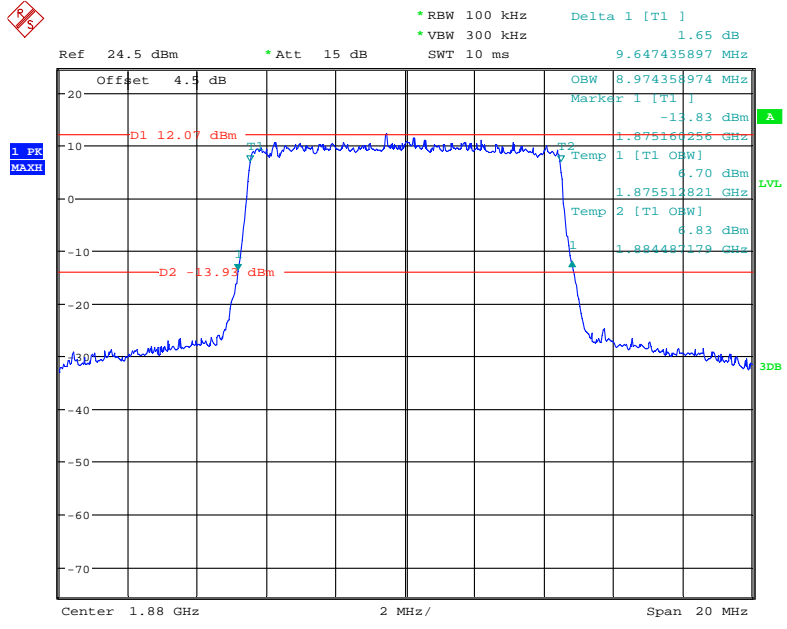
Date: 9.JAN.2018 14:44:09

**QPSK (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 9.JAN.2018 14:48:59

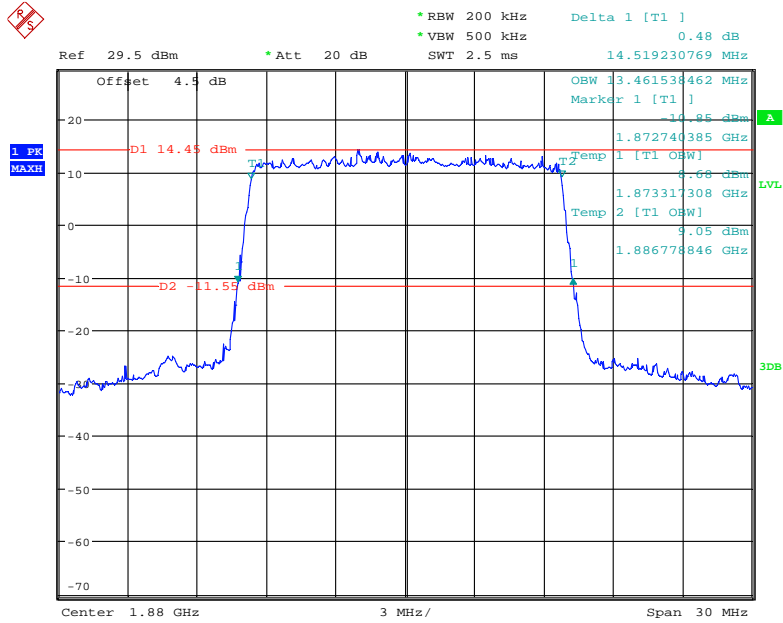
**16-QAM (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 9.JAN.2018 14:47:55

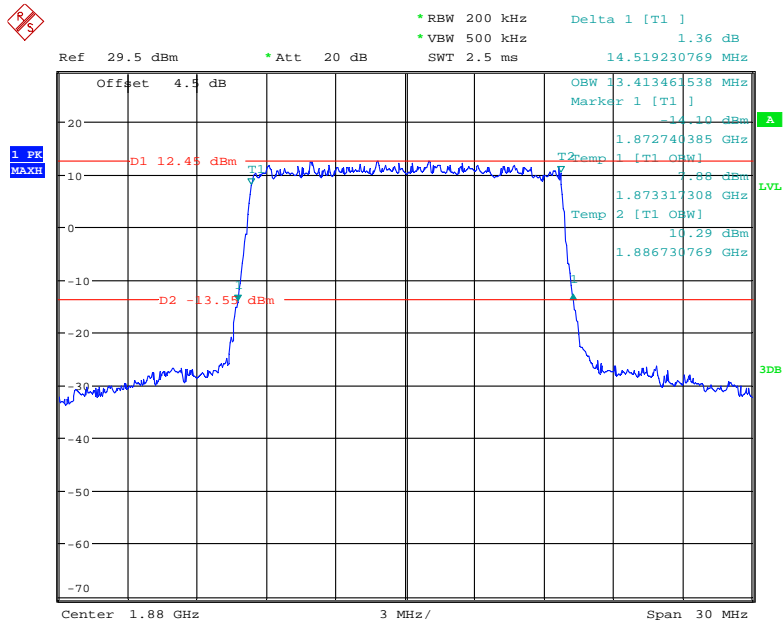


**QPSK (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



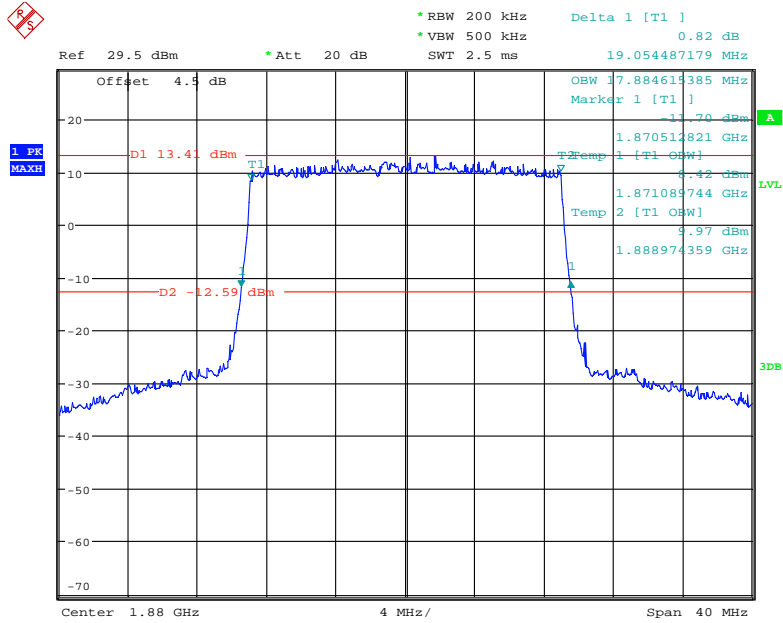
Date: 9.JAN.2018 16:05:33

**16-QAM (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



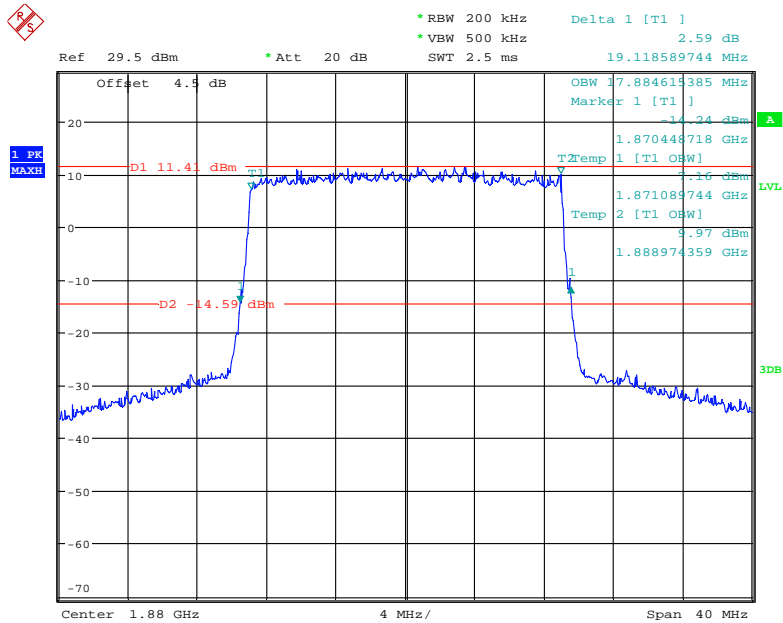
Date: 9.JAN.2018 16:04:33

### QPSK (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



Date: 9.JAN.2018 16:07:40

### 16-QAM (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel

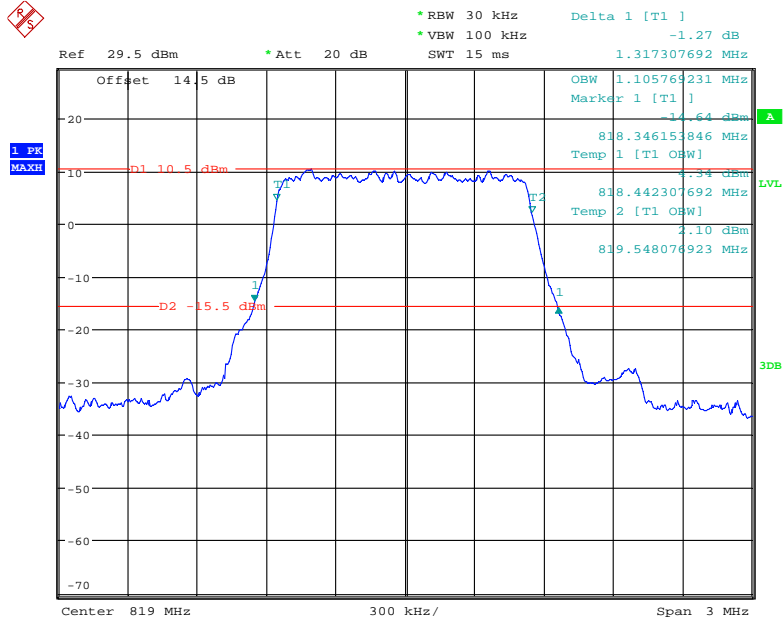


Date: 9.JAN.2018 16:06:43

**LTE Band 26: (Middle Channel)**

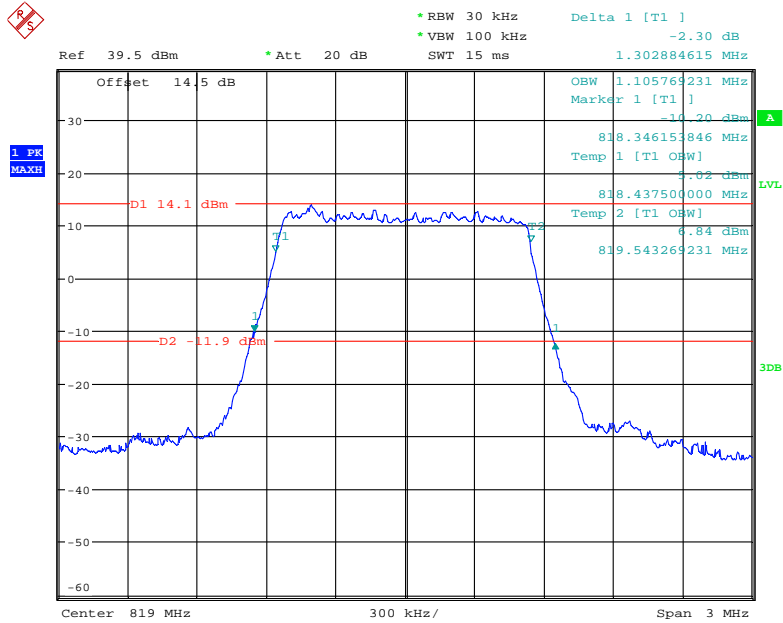
<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
1.4	QPSK	1.106	1.317
	16QAM	1.106	1.303
3.0	QPSK	2.692	2.942
	16QAM	2.692	2.952
5.0	QPSK	4.535	4.978
	16QAM	4.519	4.973
10.0	QPSK	8.942	9.715
	16QAM	8.942	9.748

**QPSK (1.4 MHz) -26 dB Emissions &99% Occupied Bandwidth, Middle channel**



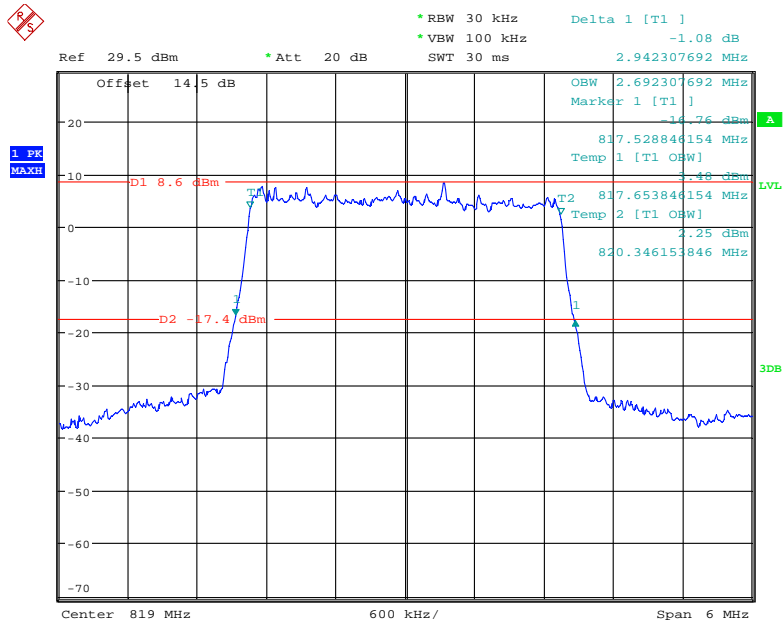
Date: 8.JAN.2018 10:37:34

**16-QAM (1.4 MHz) - 26 dB Emissions &99% Occupied Bandwidth, Middle channel**



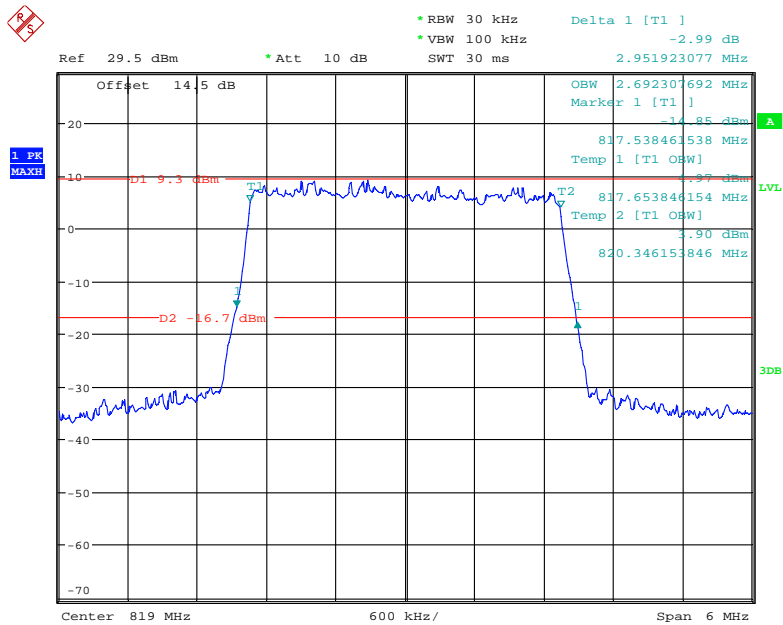
Date: 8.JAN.2018 12:39:26

**QPSK (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



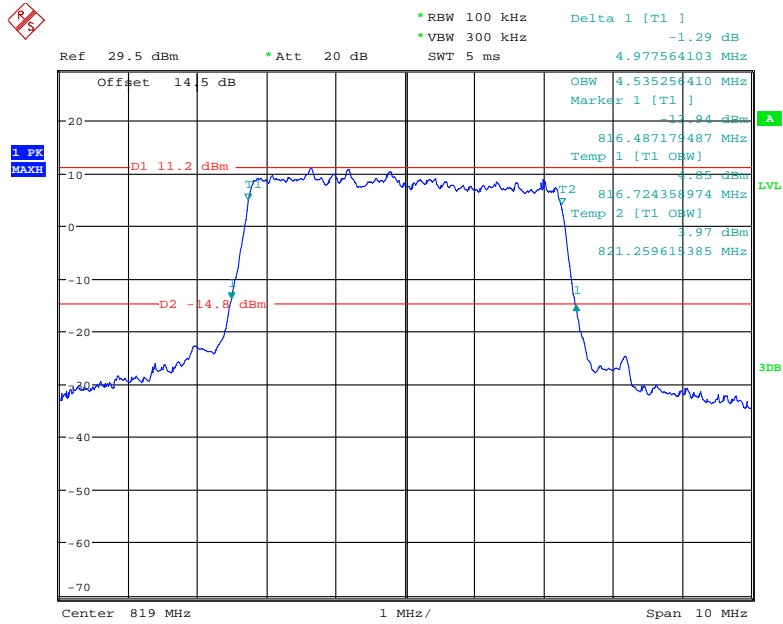
Date: 8.JAN.2018 10:39:51

**16-QAM (3.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



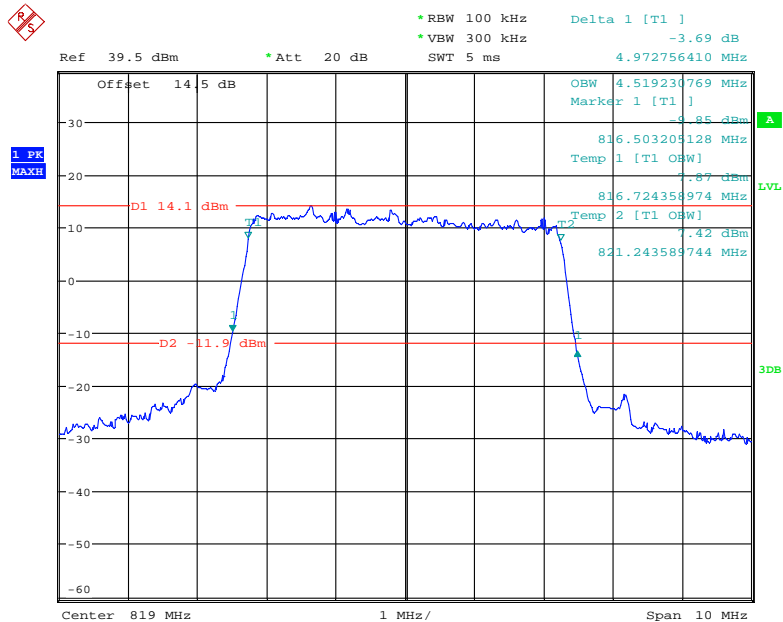
Date: 8.JAN.2018 12:52:35

**QPSK (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



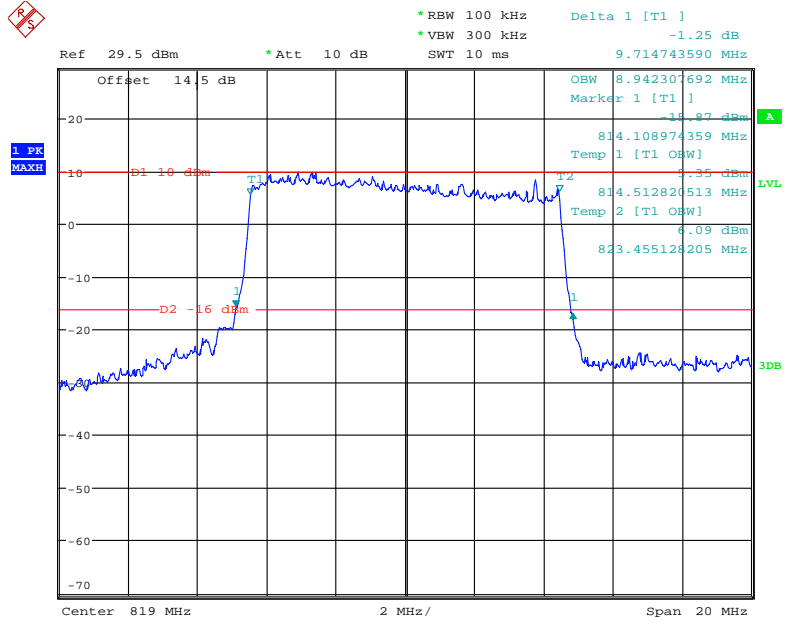
Date: 8.JAN.2018 10:42:51

**16-QAM (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



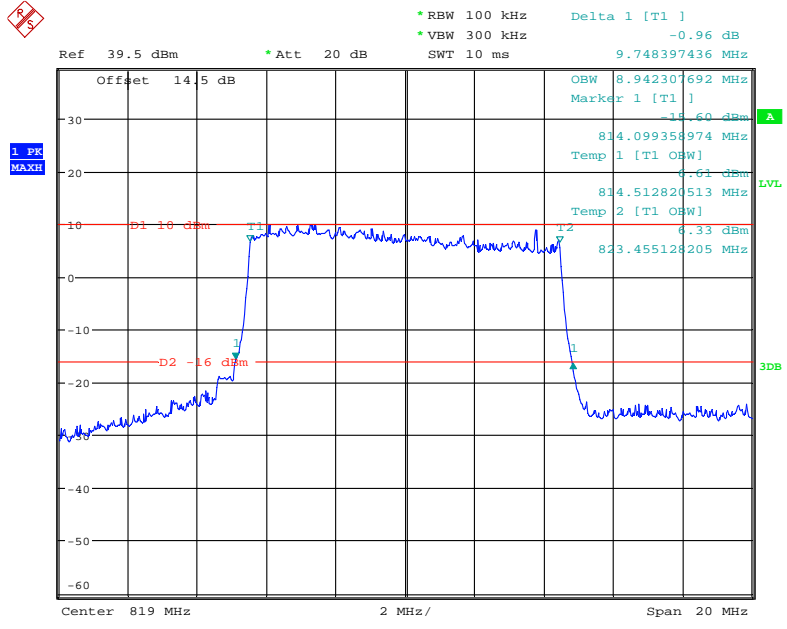
Date: 8.JAN.2018 12:42:20

### QPSK (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



Date: 8.JAN.2018 12:54:50

### 16-QAM (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



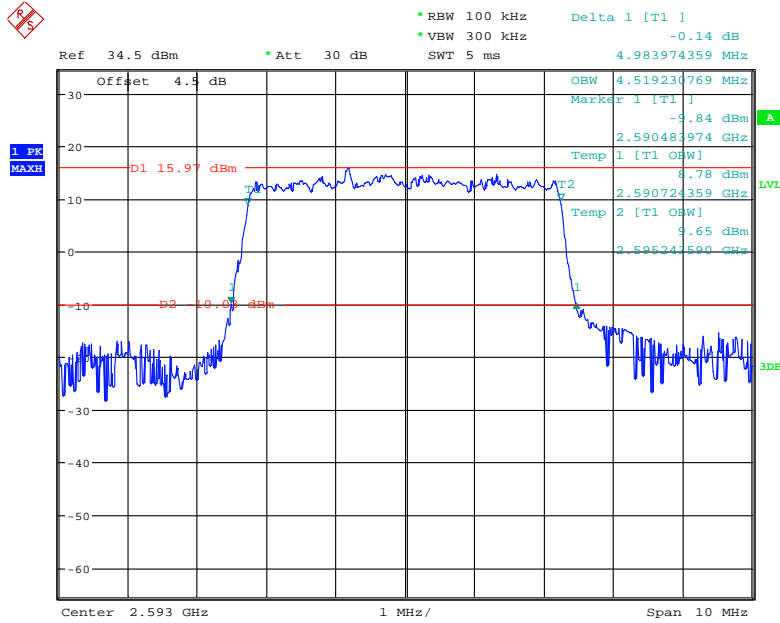
Date: 8.JAN.2018 12:43:06

**LTE BAND 41:**

<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
5.0	QPSK	4.519	4.984
	16QAM	4.551	5.673
10.0	QPSK	8.942	10.497
	16QAM	8.974	9.663
15.0	QPSK	13.462	16.106
	16QAM	13.510	16.346
20.0	QPSK	17.885	19.151
	16QAM	17.885	19.343

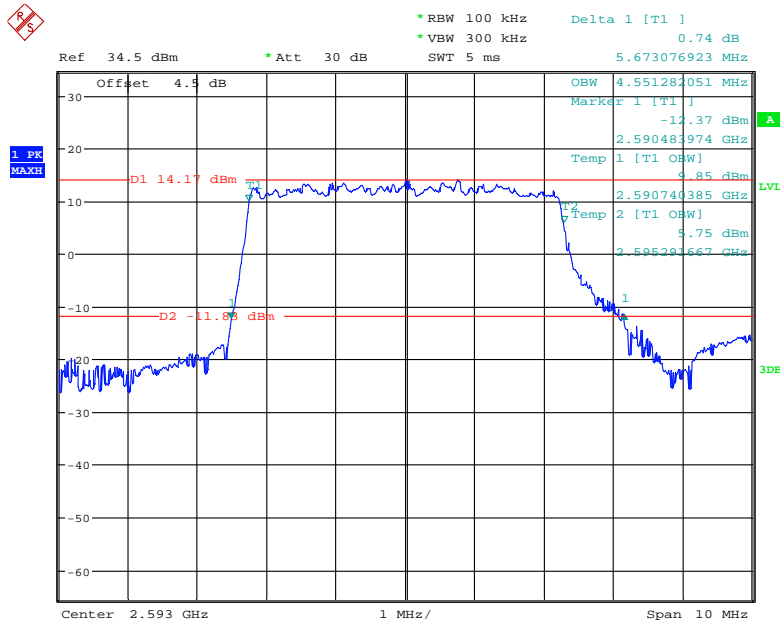


### QPSK (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



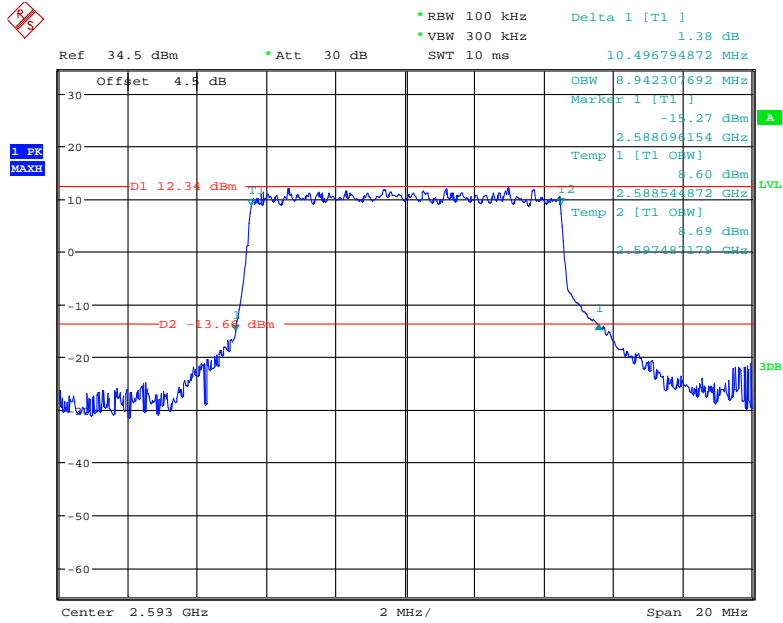
Date: 24.FEB.2018 14:45:28

### 16-QAM (5.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



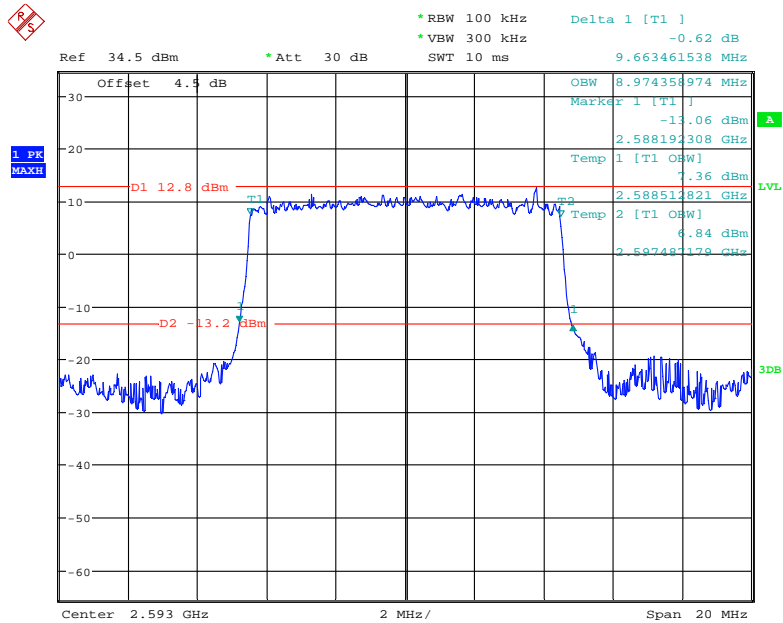
Date: 24.FEB.2018 14:48:32

### QPSK (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



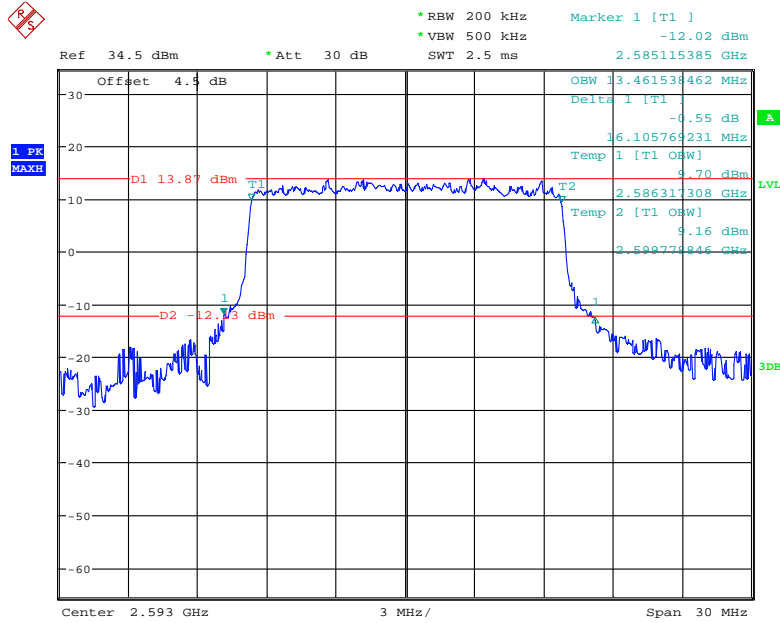
Date: 24.FEB.2018 14:50:31

### 16-QAM (10.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel



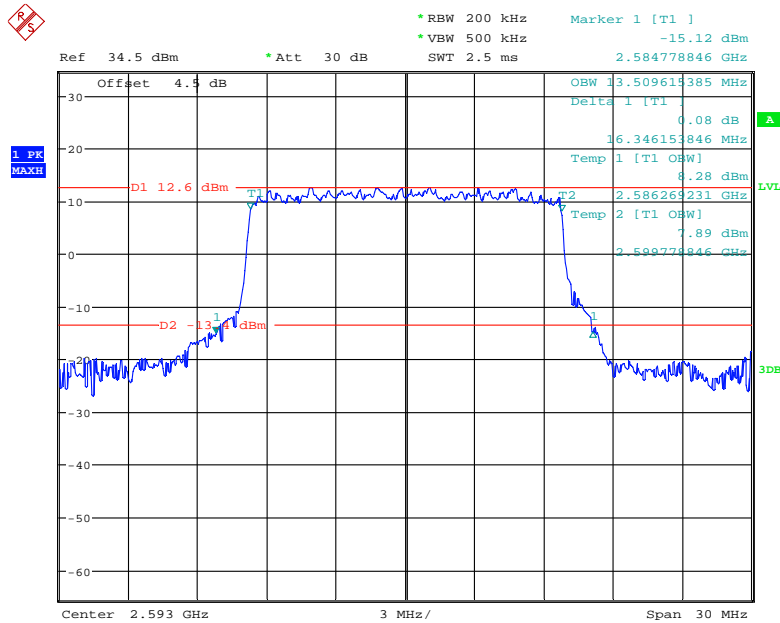
Date: 24.FEB.2018 14:52:07

**QPSK (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



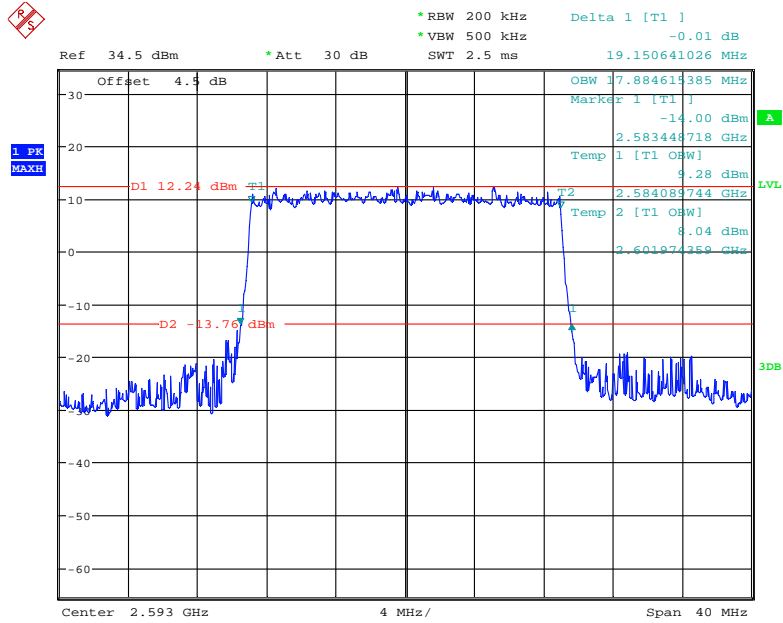
Date: 24.FEB.2018 14:55:15

**16-QAM (15.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



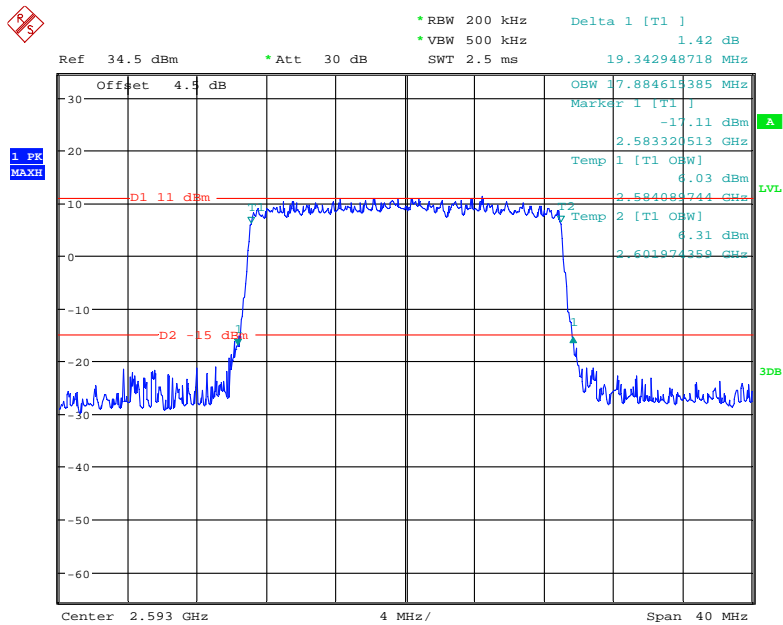
Date: 24.FEB.2018 14:59:13

**QPSK (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 24.FEB.2018 15:00:42

**16-QAM (20.0 MHz) - 26 dB Emissions & 99% Occupied Bandwidth, Middle channel**



Date: 24.FEB.2018 15:01:47

**FCC §2.1051, §22.917(a) & §24.238(a); §27.53(c) (f) (g) (h) (m); §90.691 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS**

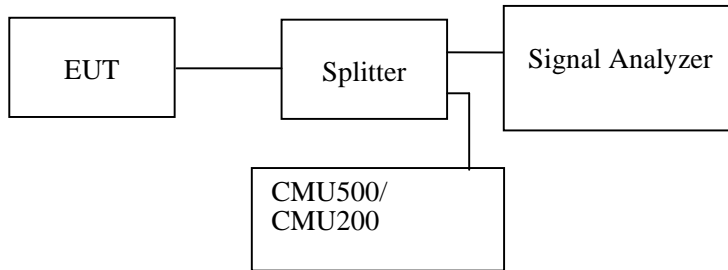
**Applicable Standard**

FCC §2.1051, §22.917(a) and §24.238(a) and §27.53(c) (f) (g) (h) (m) and §90.691.

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

**Test Procedure**

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10<sup>th</sup> harmonic.



**Test Data**

**Environmental Conditions**

<b>Temperature:</b>	23~25 °C
<b>Relative Humidity:</b>	48~54 %
<b>ATM Pressure:</b>	100.0~101.0 kPa

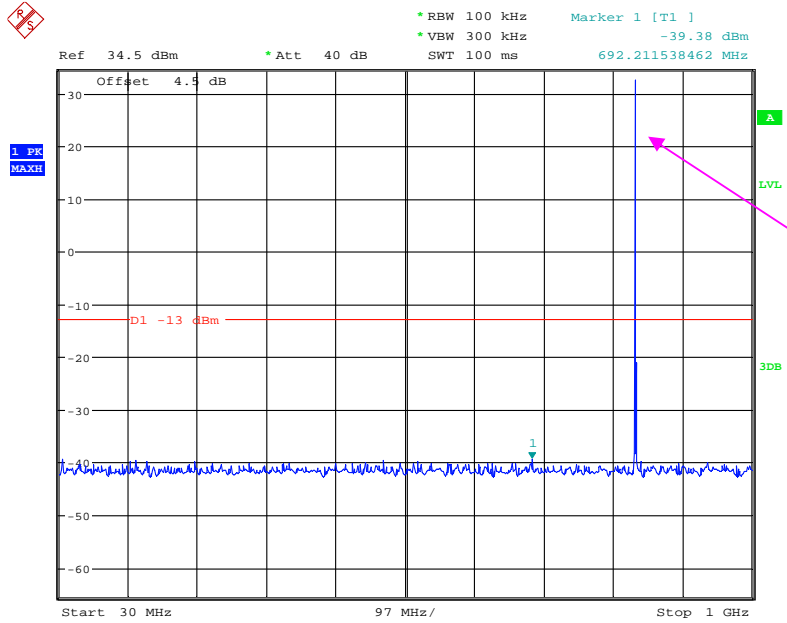
The testing was performed by Simon Wang from 2018-01-06 to 2018-04-18

*EUT operation mode: Transmitting*

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

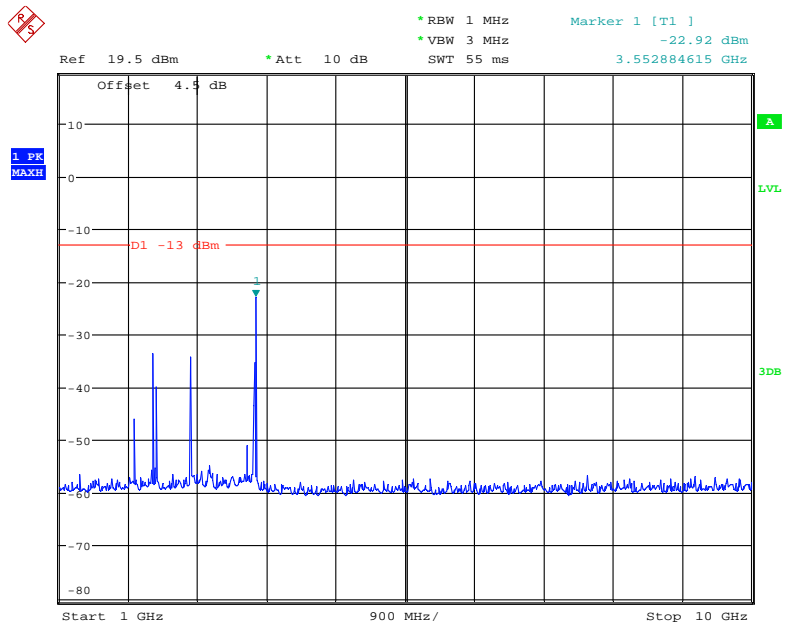
Cellular Band (Part 22H)

30 MHz – 1 GHz (GSM Mode)



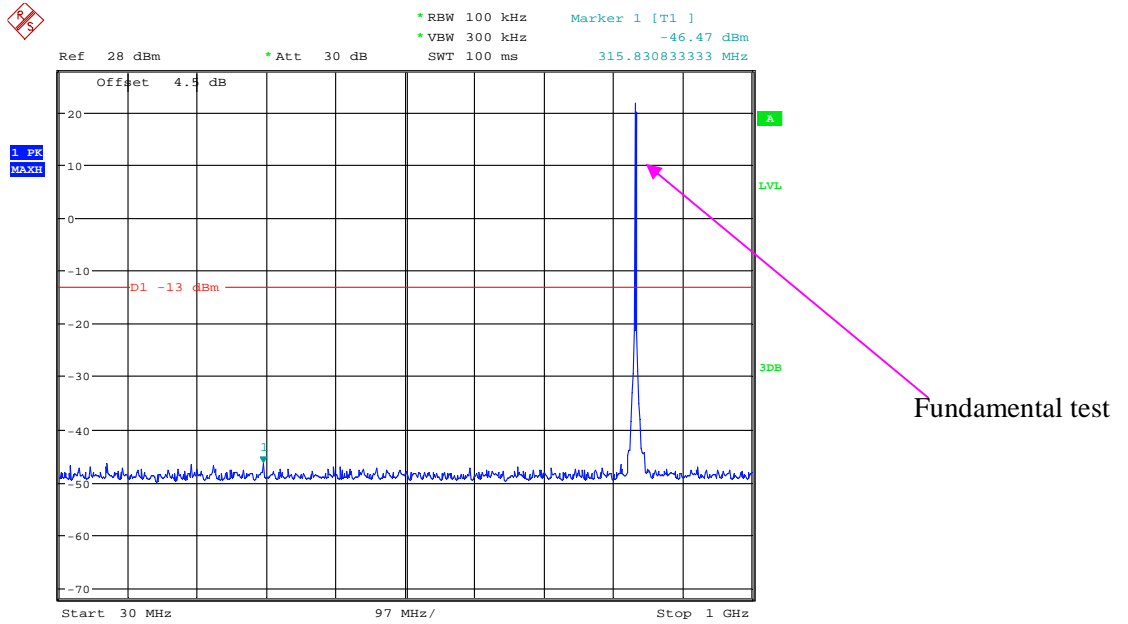
Date: 6.JAN.2018 14:48:46

1 GHz – 10 GHz (GSM Mode)



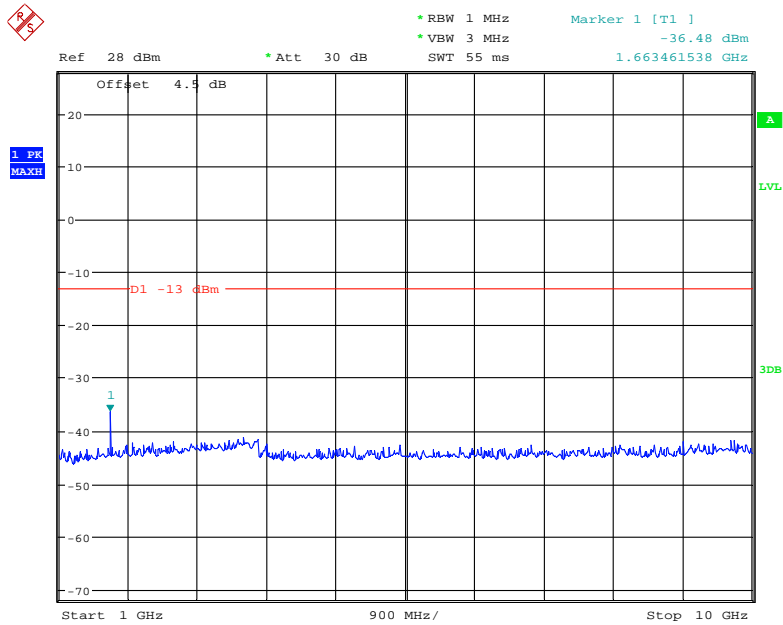
Date: 6.JAN.2018 14:49:51

**30 MHz – 1 GHz CDMA (1\*RTT BC 0) Mode, Middle channel**



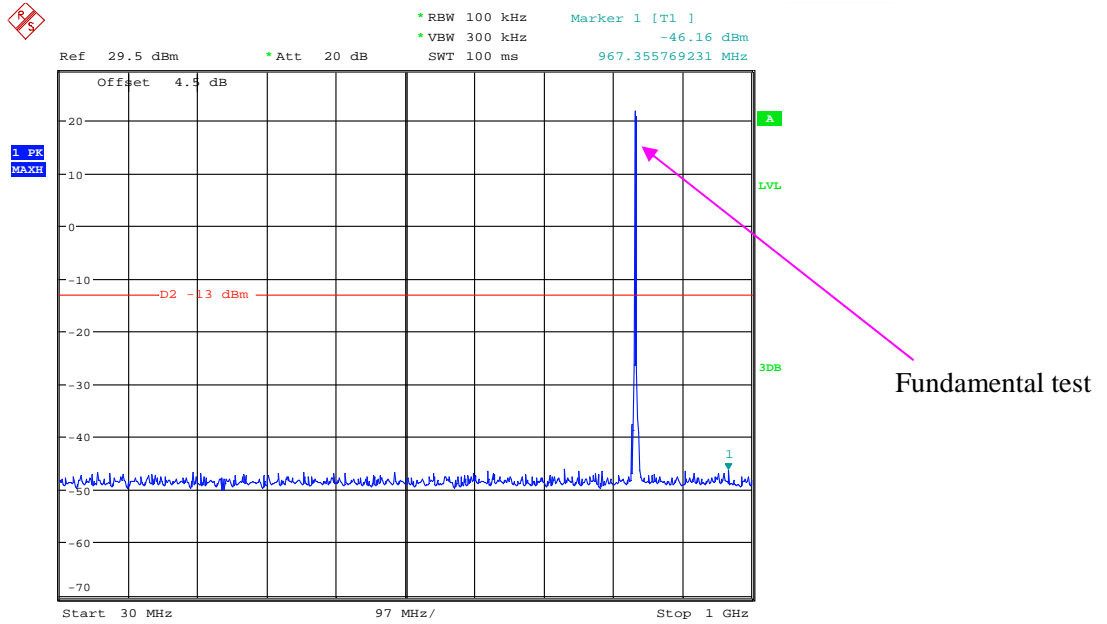
Date: 27.FEB.2018 15:05:43

**1 GHz – 10 GHz CDMA (1\*RTT BC 0) Mode, Middle channel**



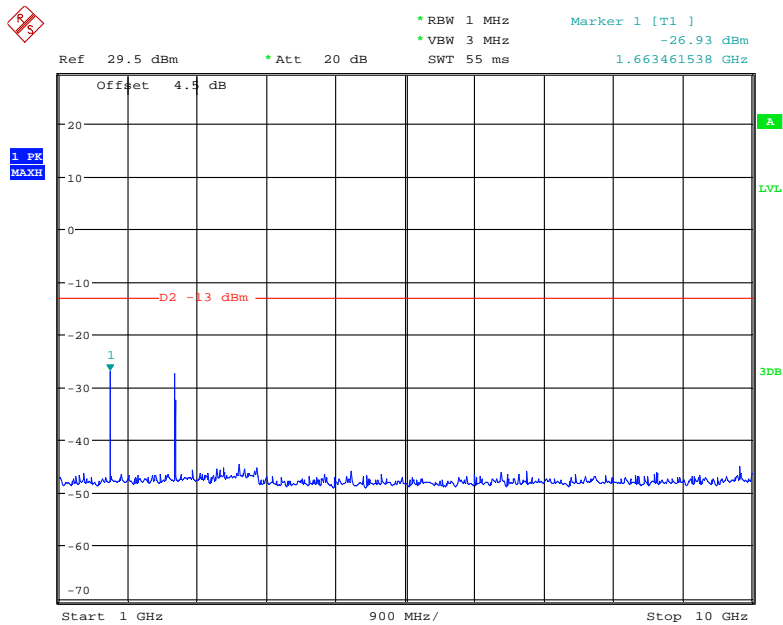
Date: 27.FEB.2018 15:09:03

### 30 MHz – 1 GHz CDMA (EV-DO, BC0) Mode, Middle channel



Date: 28.FEB.2018 17:28:14

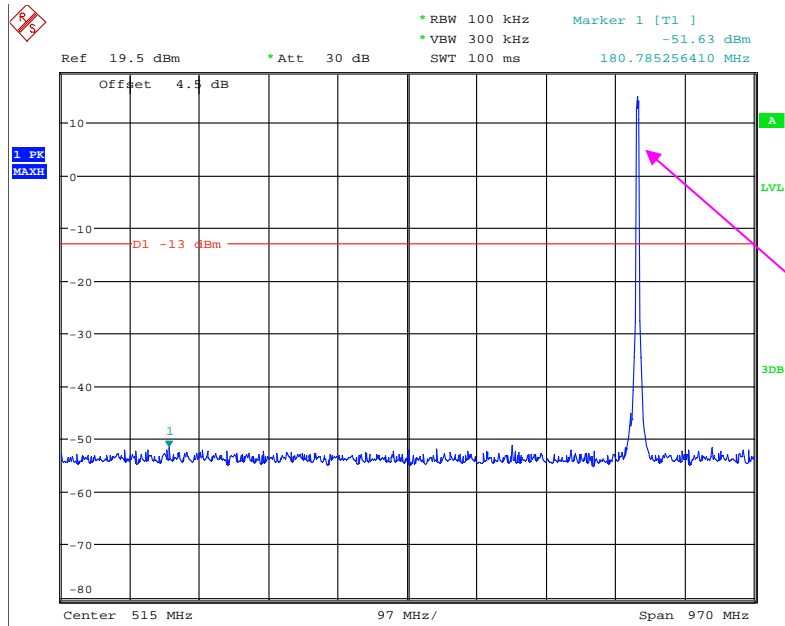
### 1 GHz – 10 GHz CDMA (EV-DO, BC0) Mode, Middle channel



Date: 28.FEB.2018 17:27:41

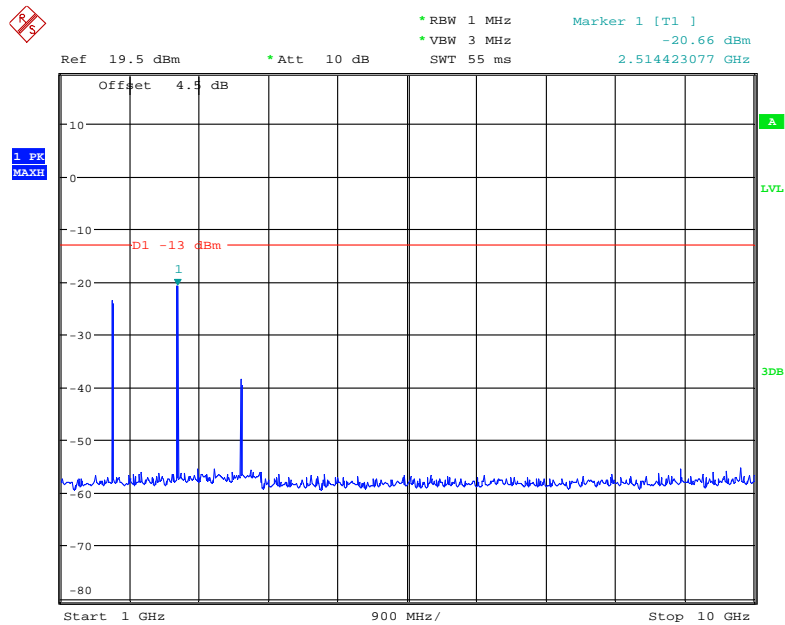


### 30 MHz – 1 GHz (WCDMA Mode)



Date: 6.JAN.2018 16:26:52

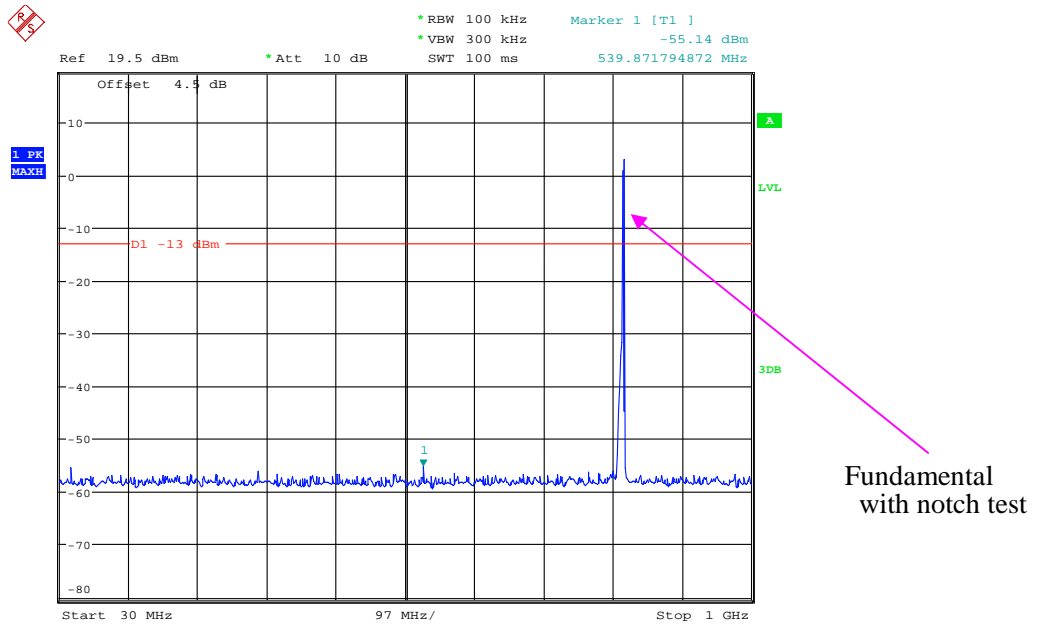
### 1 GHz – 10 GHz (WCDMA Mode)



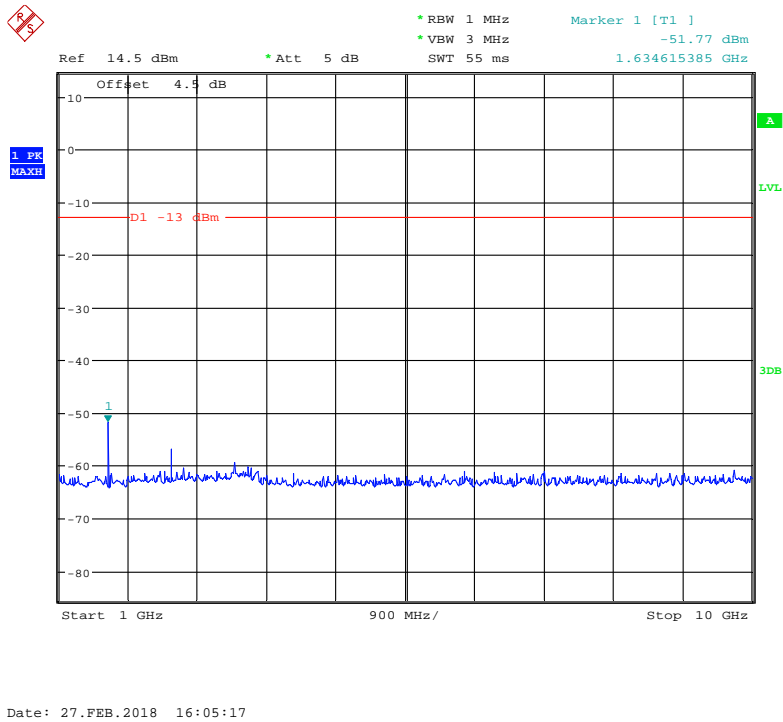
Date: 6.JAN.2018 16:27:24

**PART 90S:**

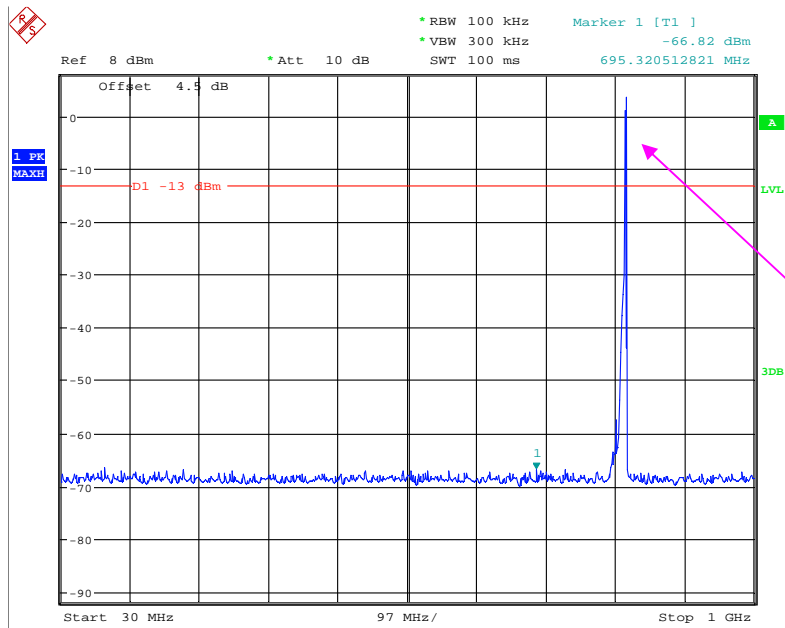
**30 MHz – 1 GHz CDMA (1\*RTT BC 10) Mode, Middle channel**



**1 GHz – 10 GHz CDMA (1\*RTT BC 10) Mode, Middle channel**



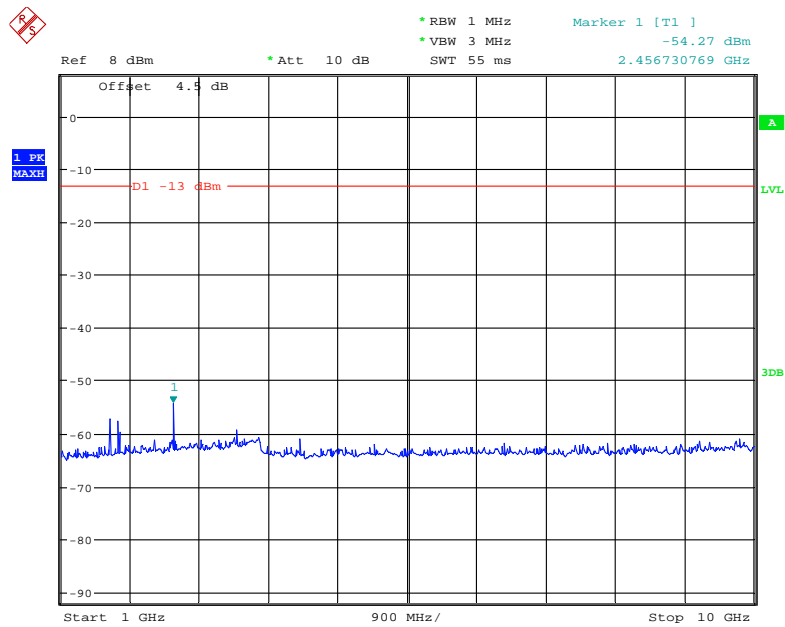
### 30 MHz – 1 GHz CDMA (EV-DO, BC10) Mode, Middle channel



Fundamental with notch test

Date: 28.FEB.2018 18:23:47

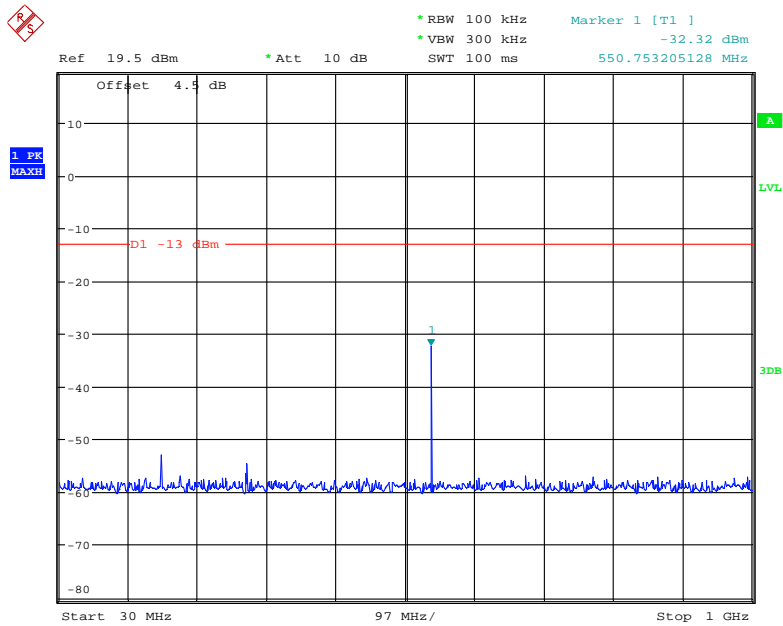
### 1 GHz – 10 GHz CDMA (EV-DO, BC10) Mode, Middle channel



Date: 28.FEB.2018 18:22:51

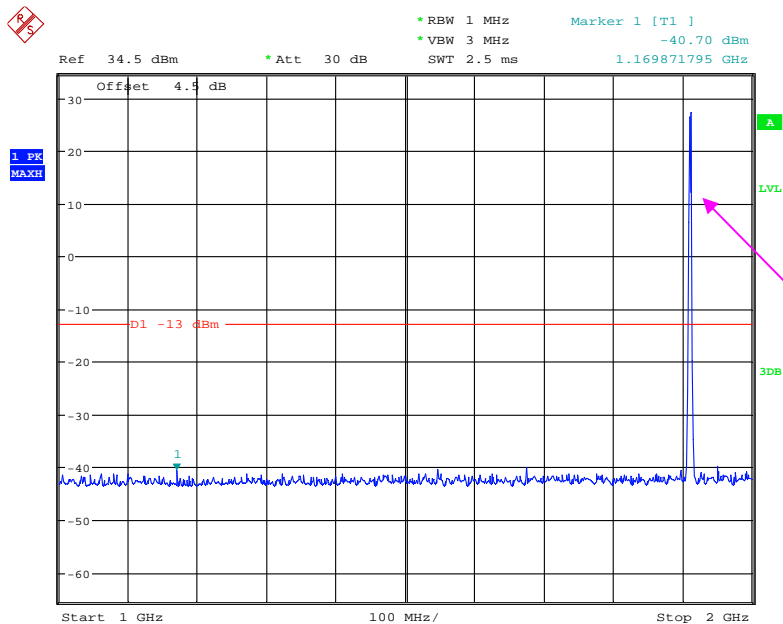
PCS Band (Part 24E)

30 MHz – 1 GHz (GSM Mode)



Date: 6.JAN.2018 14:22:17

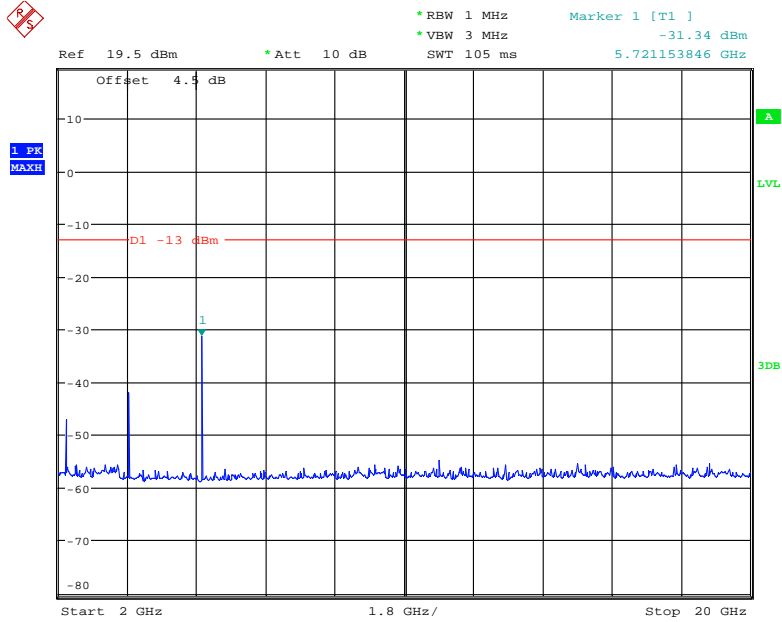
1 GHz – 2 GHz (GSM Mode)



Fundamental test

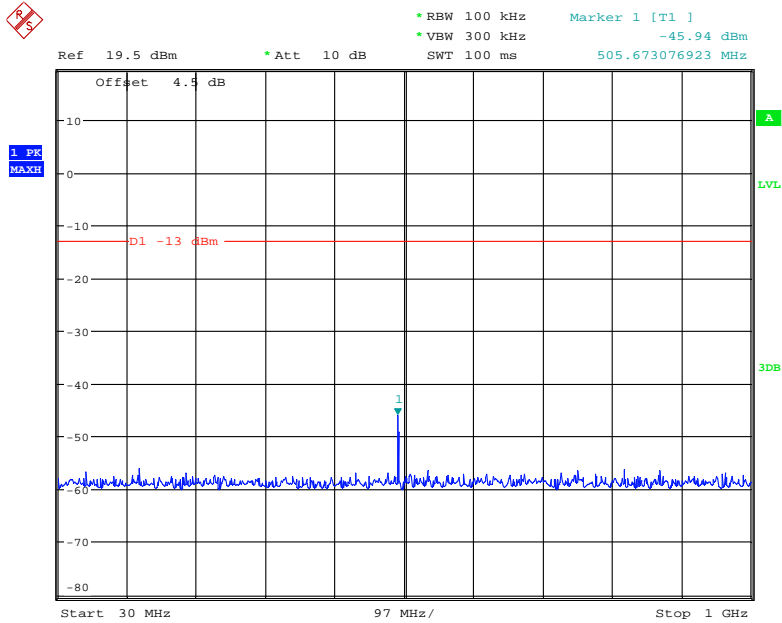
Date: 6.JAN.2018 14:24:48

### 2 GHz – 20 GHz (GSM Mode)



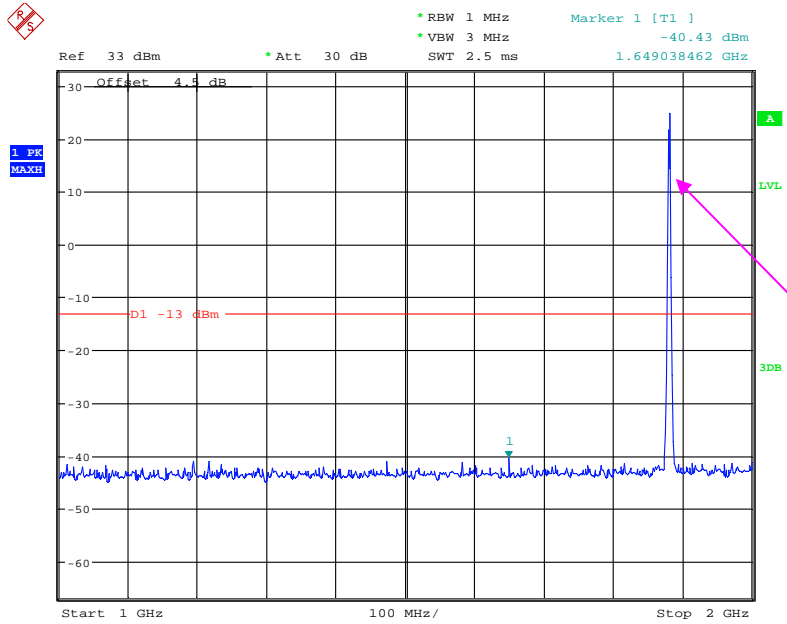
Date: 6.JAN.2018 14:25:19

### 30 MHz – 1 GHz CDMA (1\*RTT BC 1) Mode, Middle channel



Date: 27.FEB.2018 15:35:18

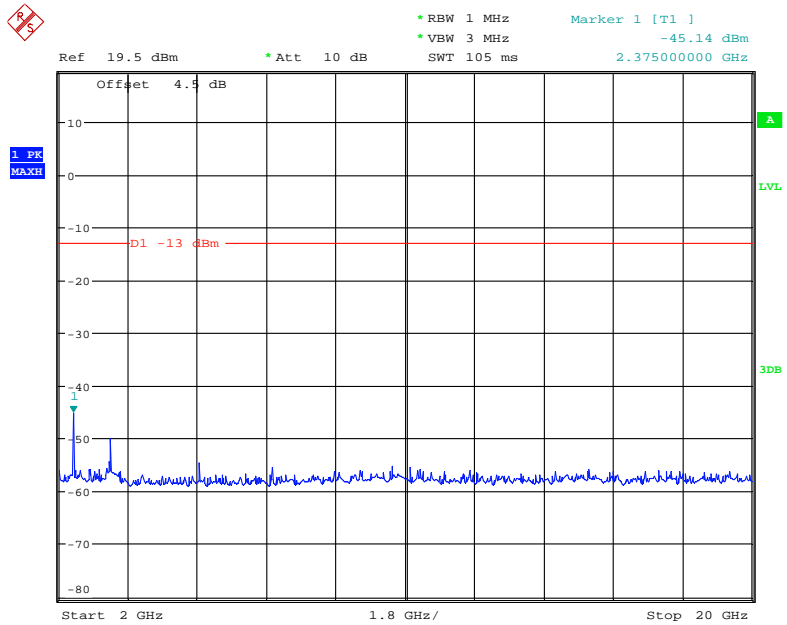
### 1 GHz – 2 GHz CDMA (1\*RTT BC 1) Mode, Middle channel



Fundamental test

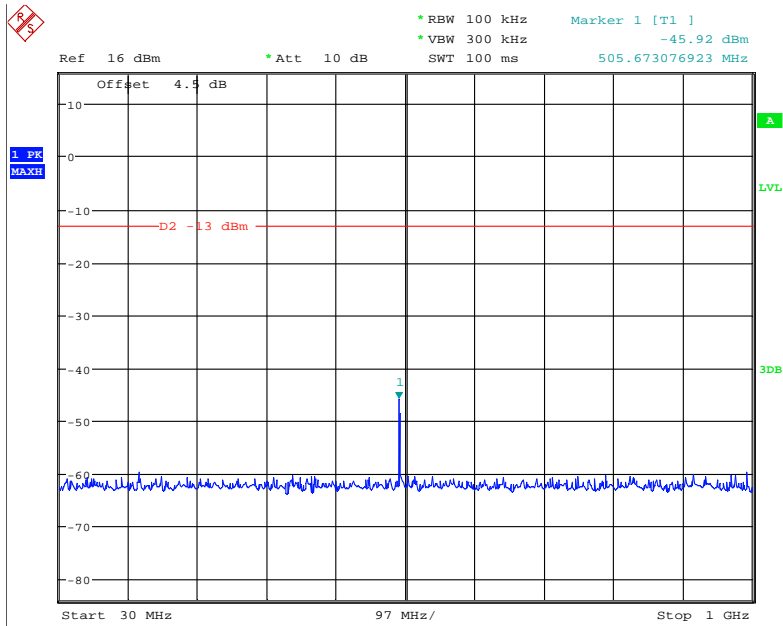
Date: 27.FEB.2018 15:44:59

### 2 GHz – 20 GHz CDMA (1\*RTT BC 1) Mode, Middle channel



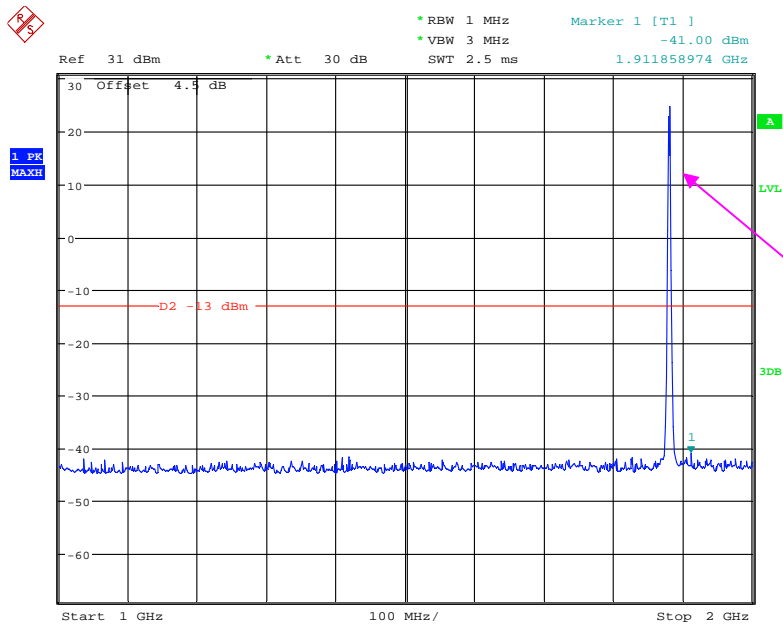
Date: 27.FEB.2018 15:44:26

### 30 MHz – 1 GHz CDMA (EV-DO, BC1) Mode, Middle channel



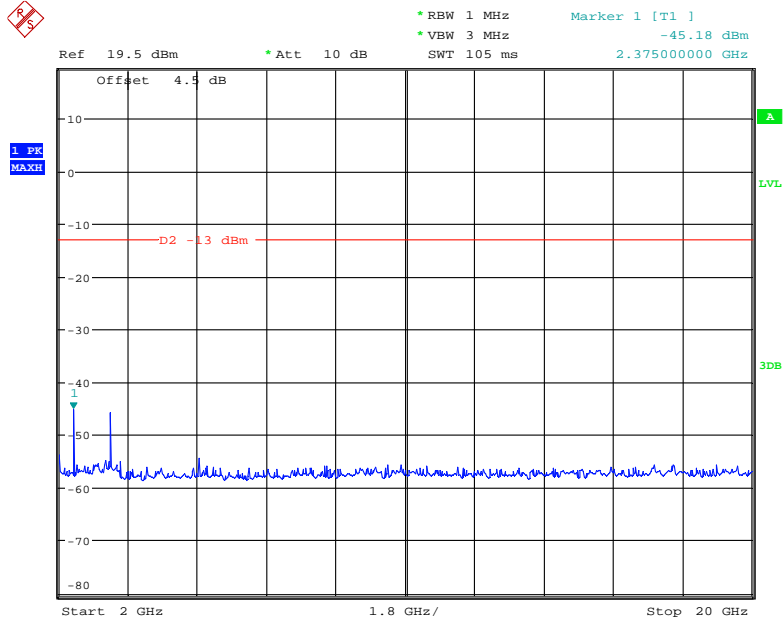
Date: 28.FEB.2018 17:38:48

### 1 GHz – 2 GHz CDMA (EV-DO, BC1) Mode, Middle channel



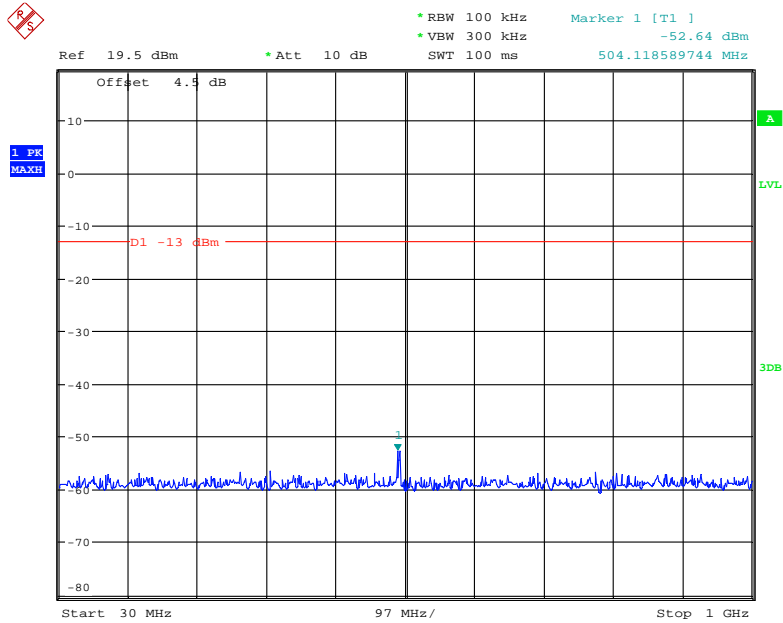
Date: 28.FEB.2018 17:40:03

### 2 GHz – 20 GHz CDMA (EV-DO, BC1) Mode, Middle channel



Date: 28.FEB.2018 17:40:52

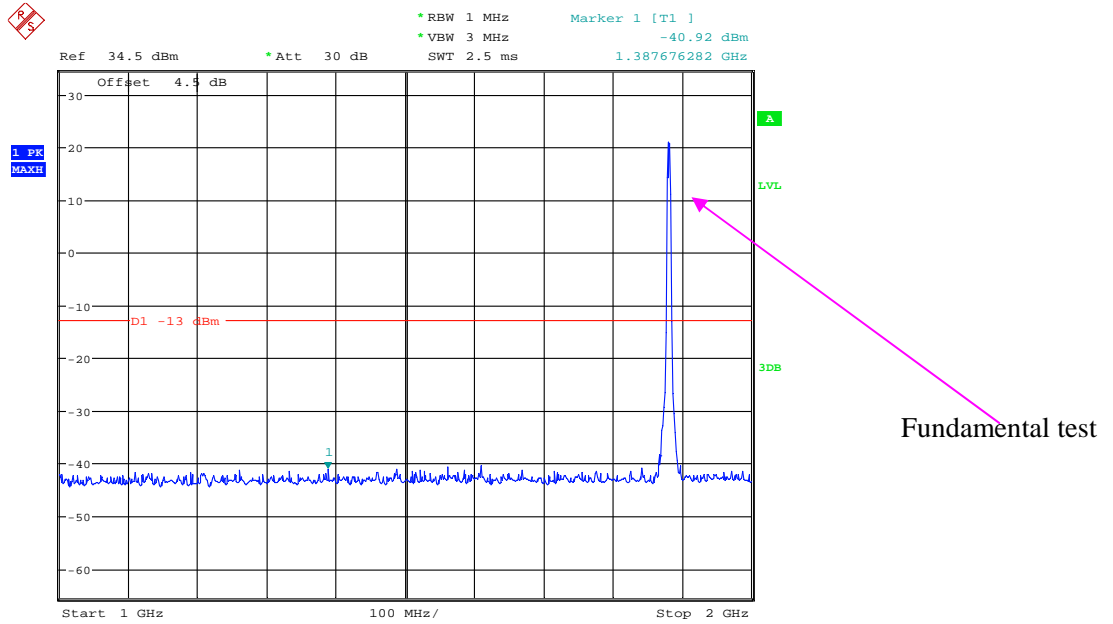
### 30 MHz – 1 GHz (WCDMA Mode)



Date: 6.JAN.2018 16:24:12

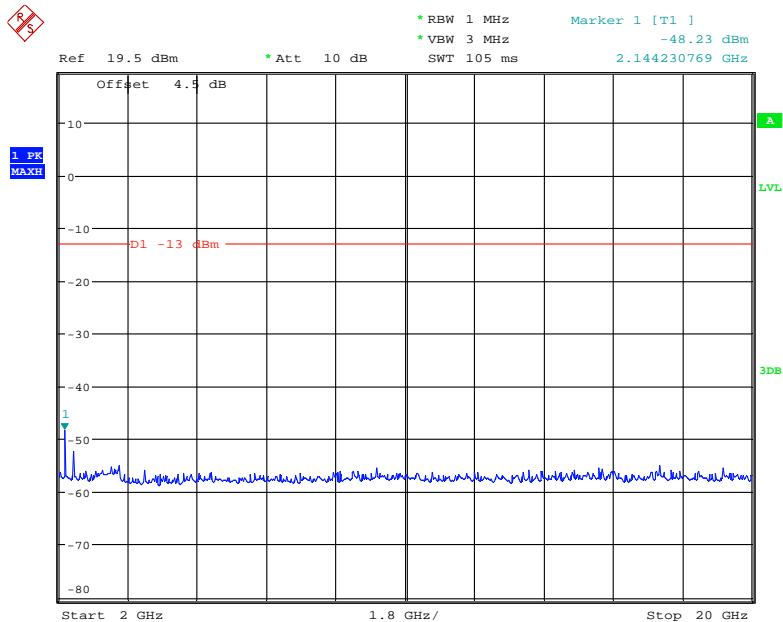


### 1 GHz – 2 GHz (WCDMA Mode)



Date: 6.JAN.2018 16:22:44

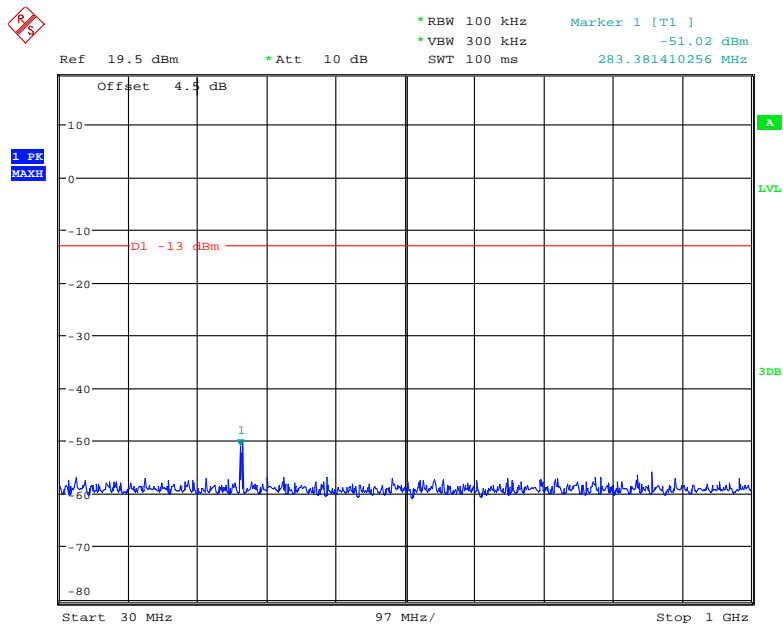
### 2 GHz – 20 GHz (WCDMA Mode)



Date: 6.JAN.2018 16:23:37

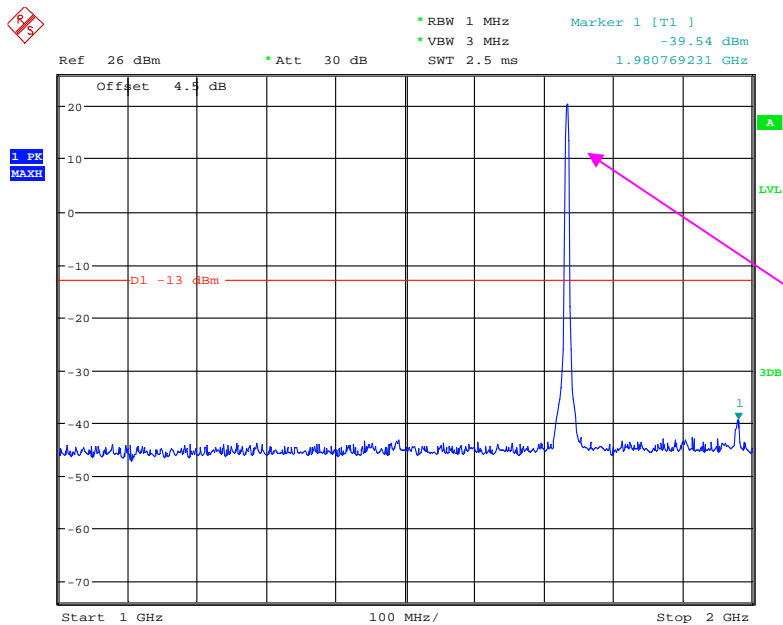
AWS Band (Part 27)

30 MHz – 1 GHz (WCDMA Mode)



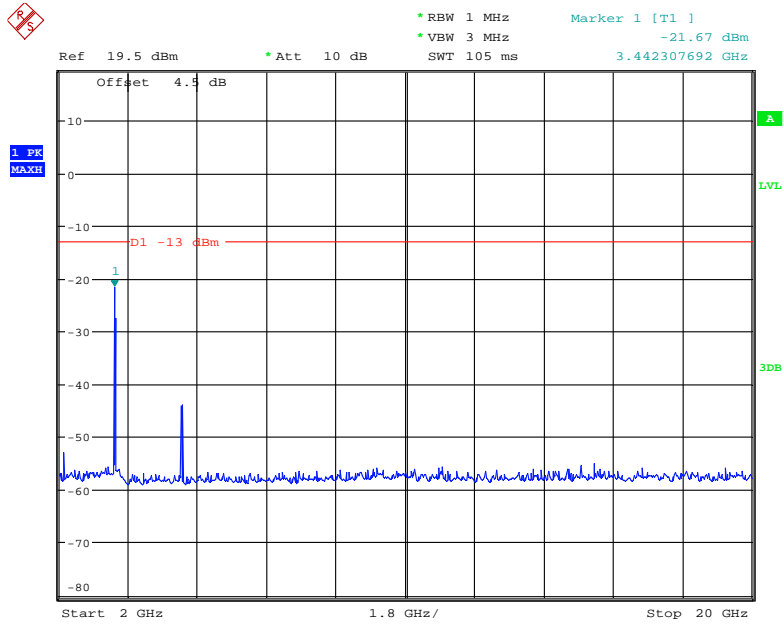
Date: 6.JAN.2018 16:26:08

1 GHz – 2 GHz (WCDMA Mode)



Date: 6.JAN.2018 16:25:02

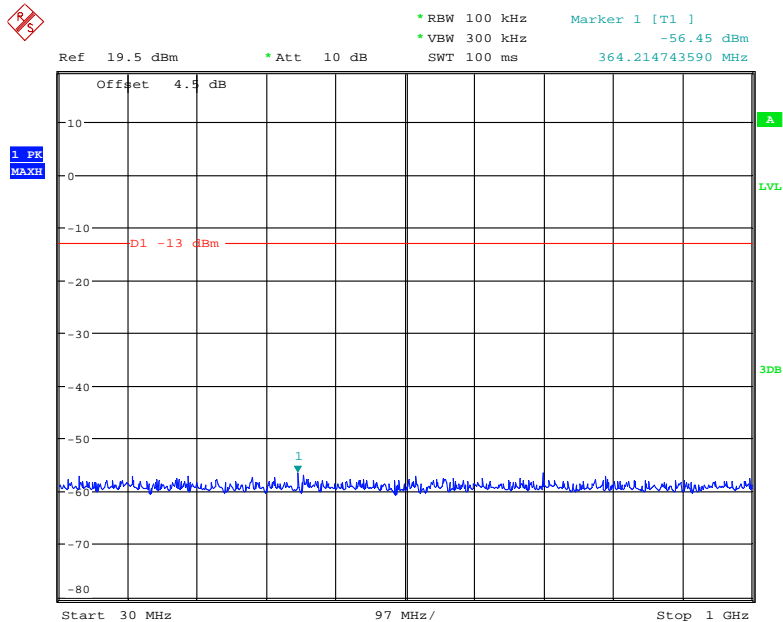
### 2 GHz – 20 GHz (WCDMA Mode)



Date: 6.JAN.2018 16:25:35

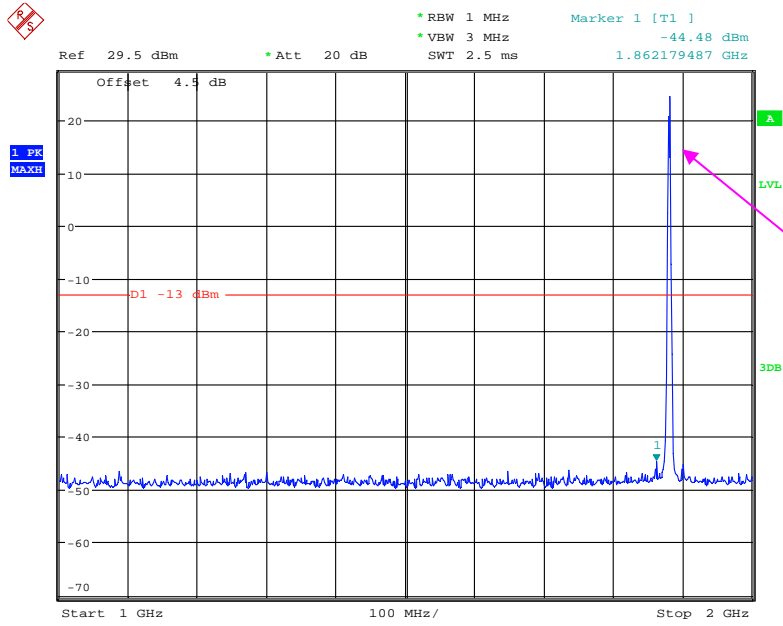
### LTE Band 2:

### 30 MHz - 1 GHz (1.4 MHz, Middle Channel)



Date: 10.JAN.2018 11:23:39

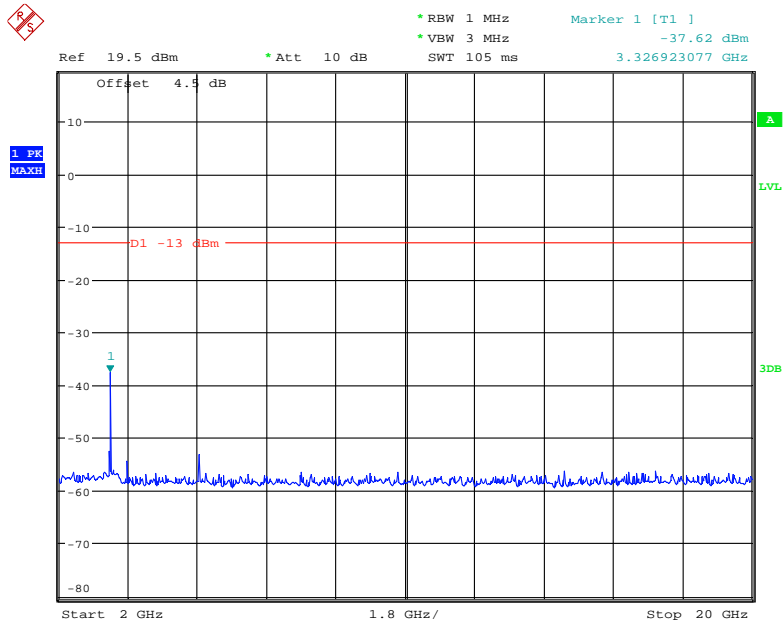
### 1 GHz – 2GHz (1.4 MHz, Middle Channel)



Fundamental test

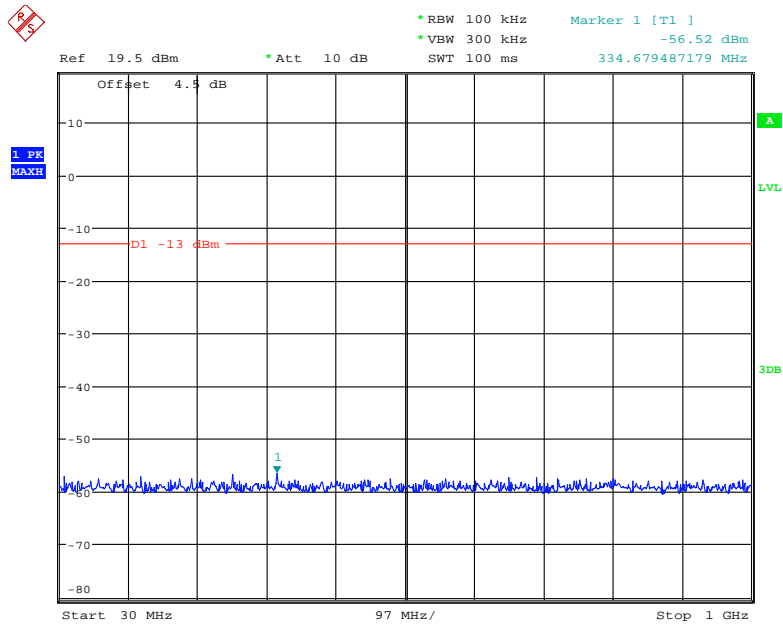
Date: 10.JAN.2018 11:53:09

### 2 GHz – 20 GHz (1.4 MHz, Middle Channel)



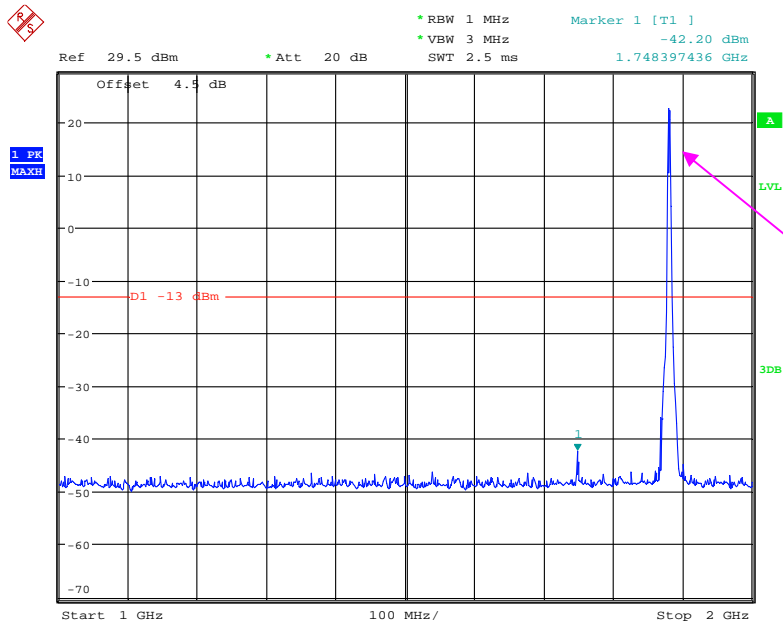
Date: 10.JAN.2018 11:52:41

### 30 MHz - 1 GHz (3.0 MHz, Middle Channel)



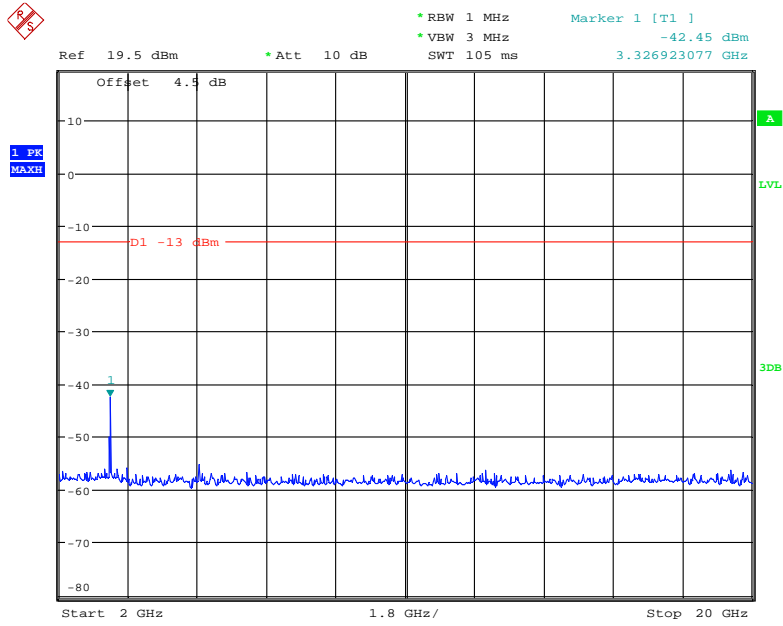
Date: 10.JAN.2018 11:23:05

### 1 GHz - 2GHz (3.0 MHz, Middle Channel)



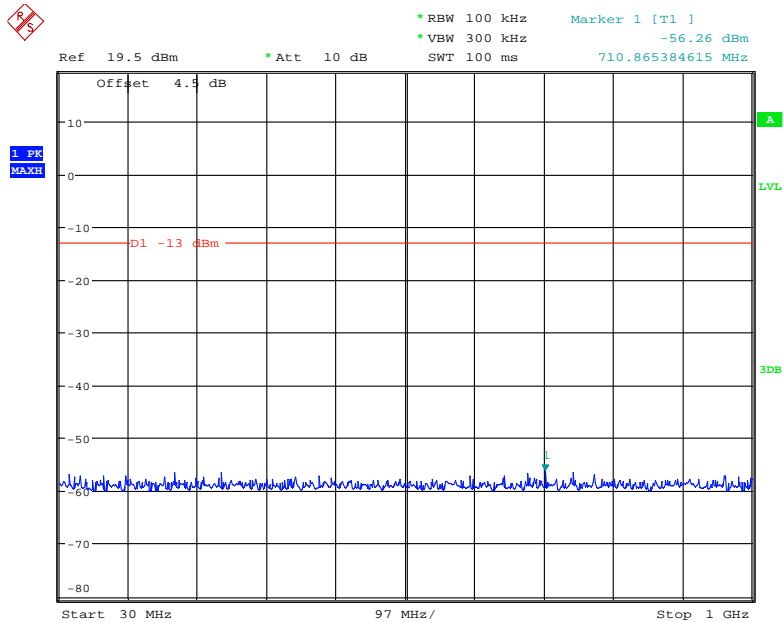
Date: 10.JAN.2018 11:53:38

### 2 GHz – 20 GHz (3.0 MHz, Middle Channel)



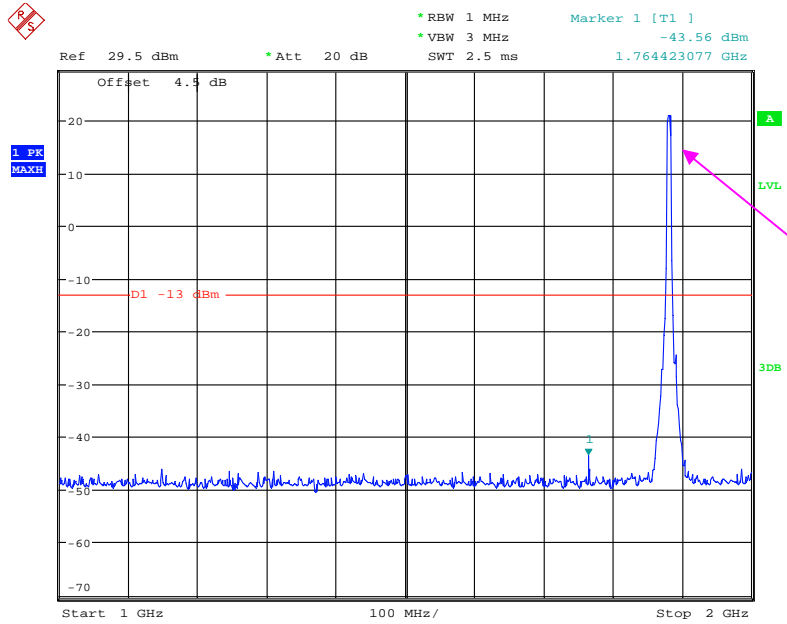
Date: 10.JAN.2018 11:52:25

### 30 MHz - 1 GHz (5.0 MHz, Middle Channel)



Date: 10.JAN.2018 11:21:29

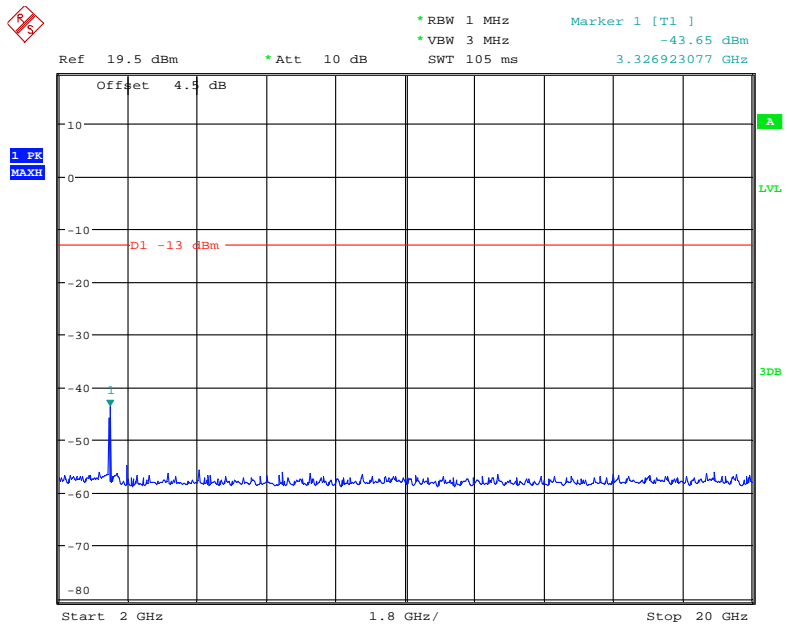
### 1 GHz – 2GHz (5.0 MHz, Middle Channel)



Fundamental test

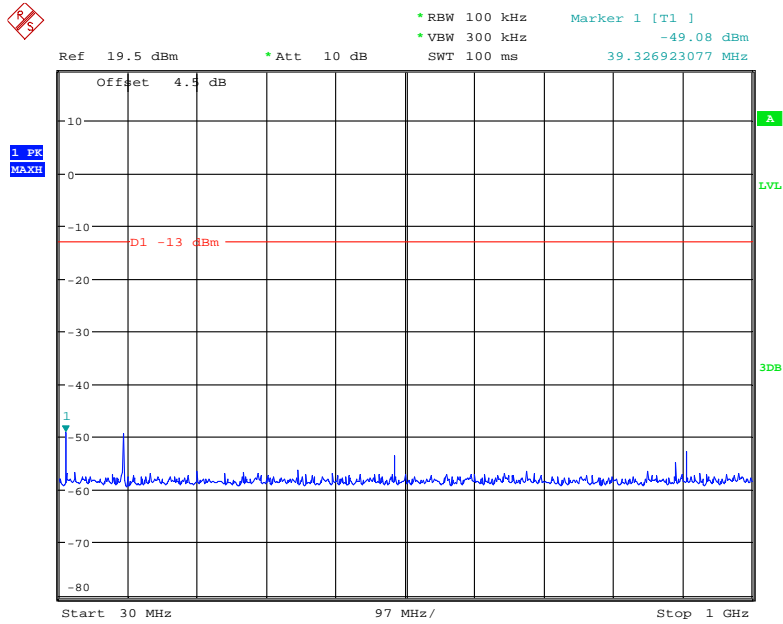
Date: 10.JAN.2018 11:54:05

### 2 GHz – 20 GHz (5.0 MHz, Middle Channel)



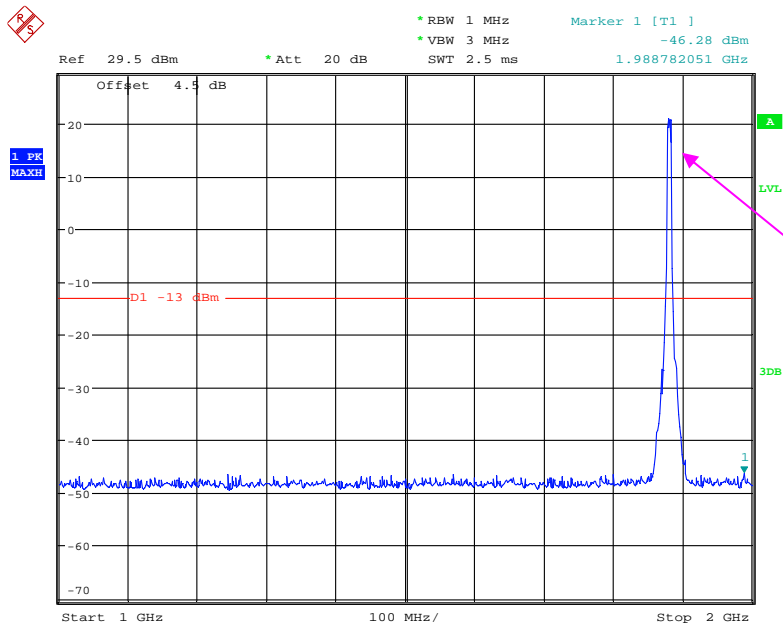
Date: 10.JAN.2018 11:52:06

### 30 MHz - 1 GHz (10.0 MHz, Middle Channel)



Date: 10.JAN.2018 11:21:08

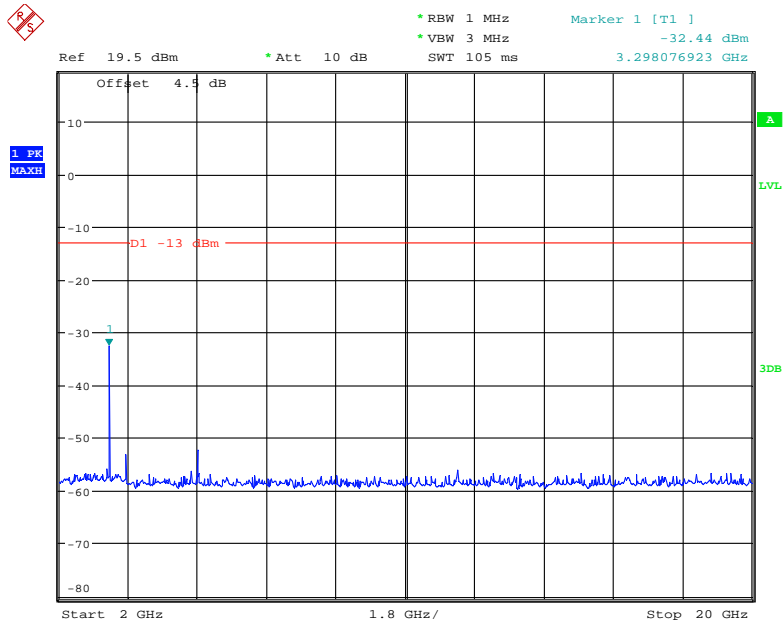
### 1 GHz - 2GHz (10.0 MHz, Middle Channel)



Date: 10.JAN.2018 13:08:15

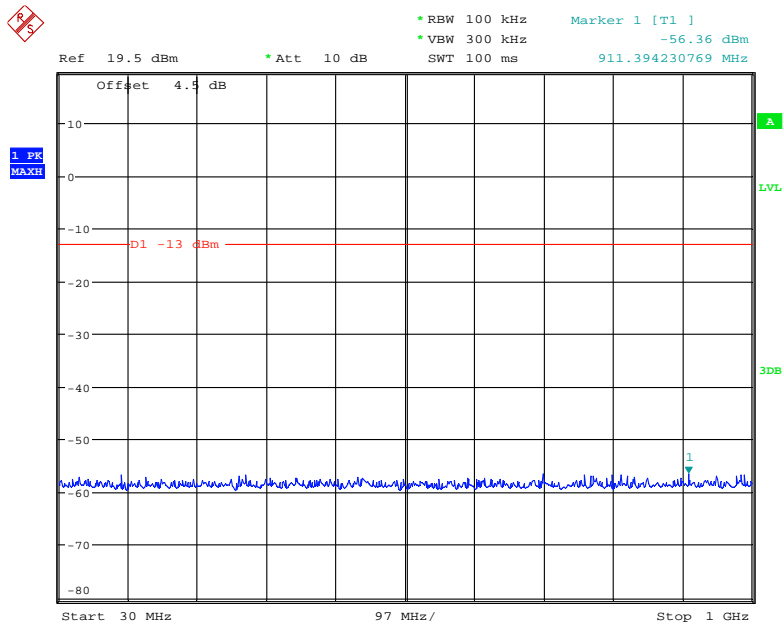


### 2 GHz – 20 GHz (10.0 MHz, Middle Channel)



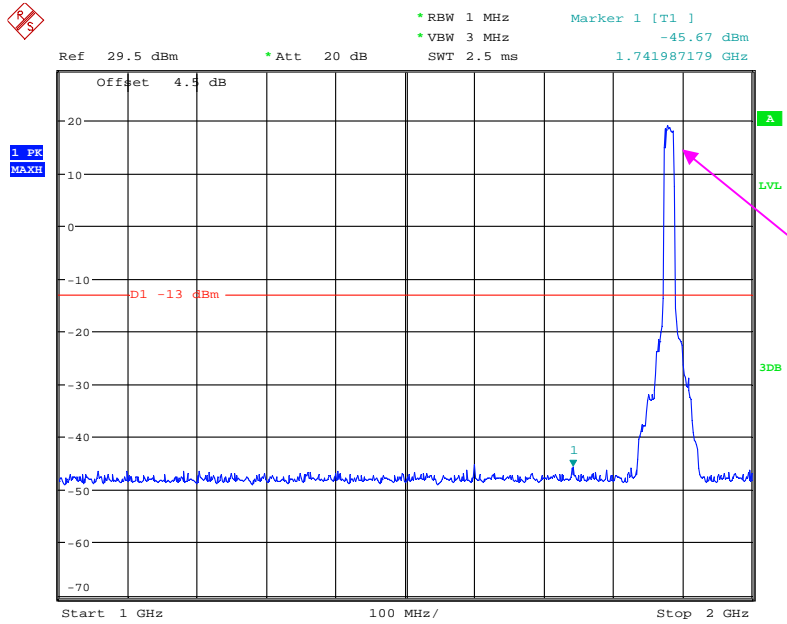
Date: 10.JAN.2018 11:51:41

### 30 MHz - 1 GHz (15.0 MHz, Middle Channel)



Date: 10.JAN.2018 11:24:46

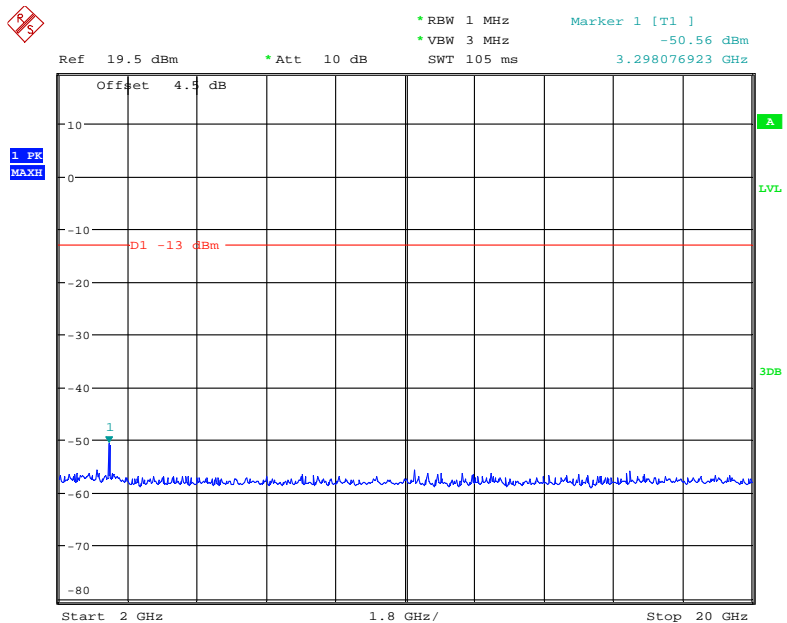
### 1 GHz – 2GHz (15.0 MHz, Middle Channel)



Fundamental test

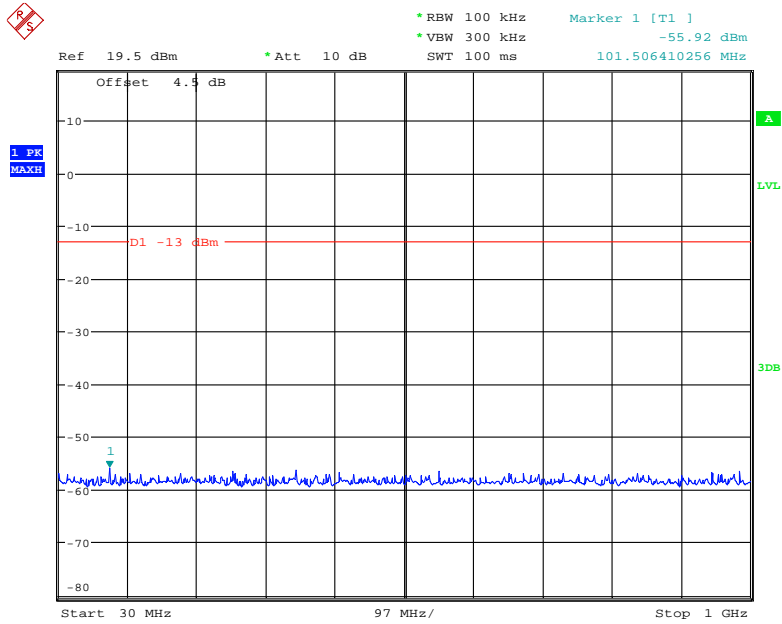
Date: 10.JAN.2018 13:06:18

### 2 GHz – 20 GHz (15.0 MHz, Middle Channel)



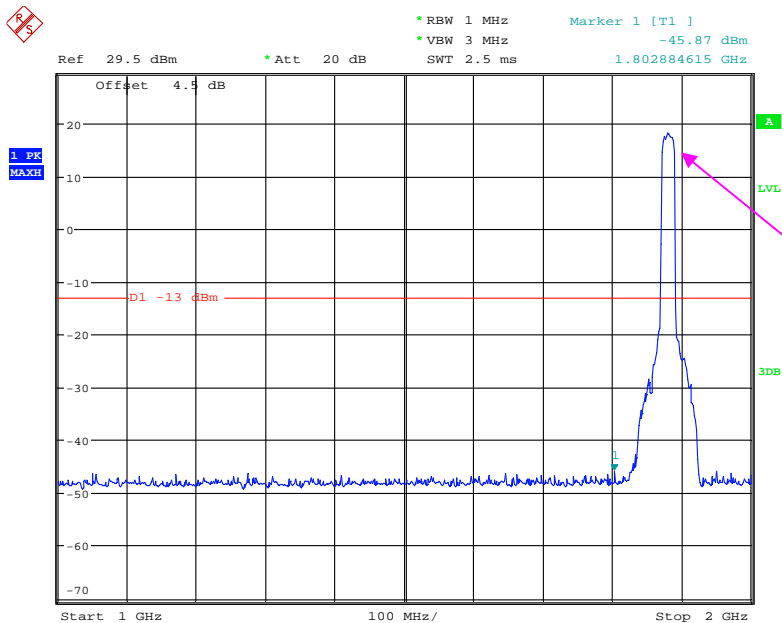
Date: 10.JAN.2018 11:51:24

### 30 MHz - 1 GHz (20.0 MHz, Middle Channel)



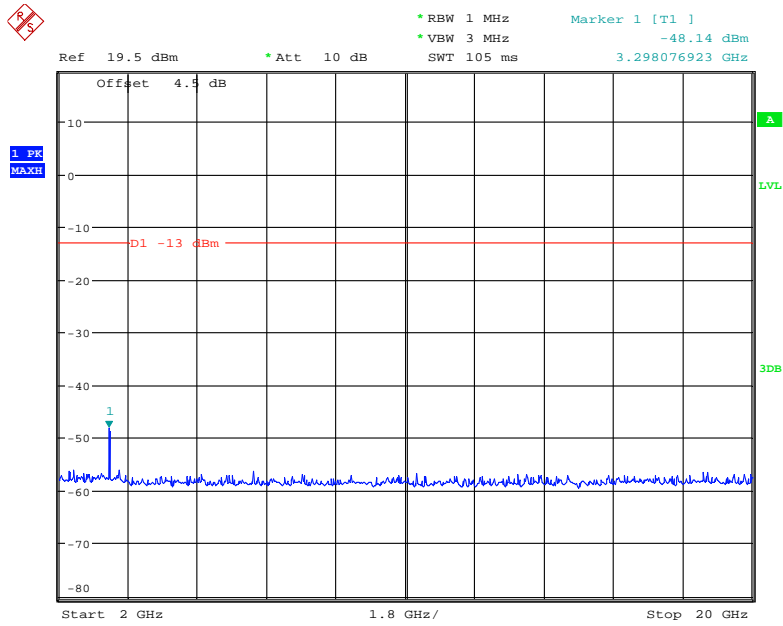
Date: 10.JAN.2018 11:25:31

### 1 GHz - 2GHz (20.0 MHz, Middle Channel)



Date: 10.JAN.2018 13:09:20

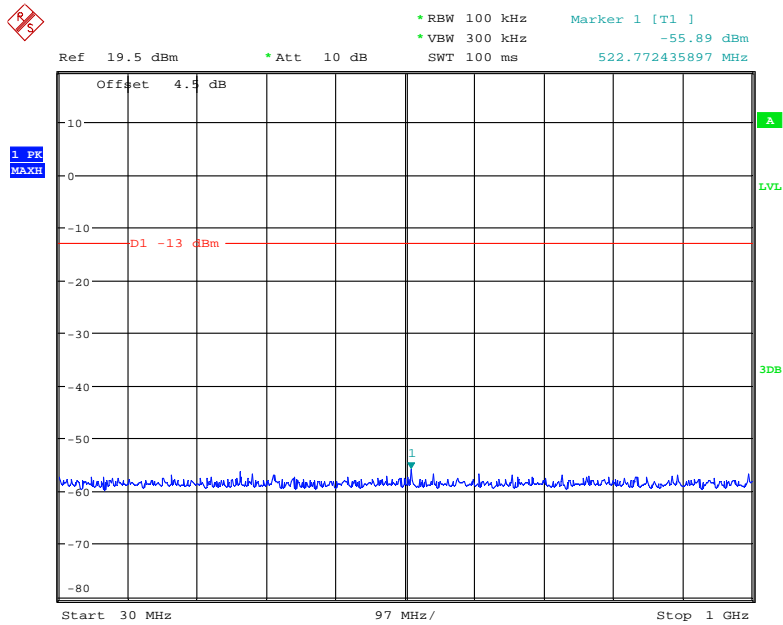
### 2 GHz – 20 GHz (20.0 MHz, Middle Channel)



Date: 10.JAN.2018 11:50:56

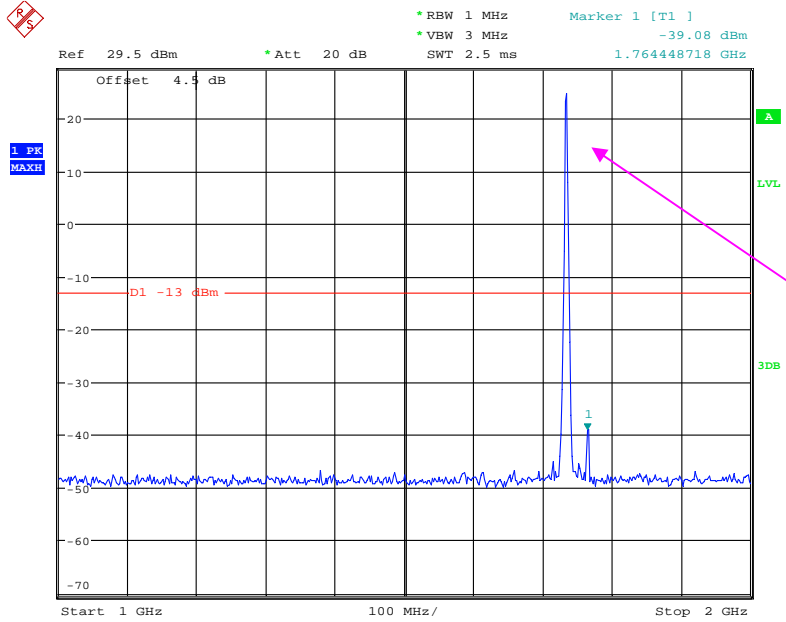
### LTE Band 4:

### 30 MHz - 1 GHz (1.4 MHz, Middle Channel)



Date: 10.JAN.2018 11:32:26

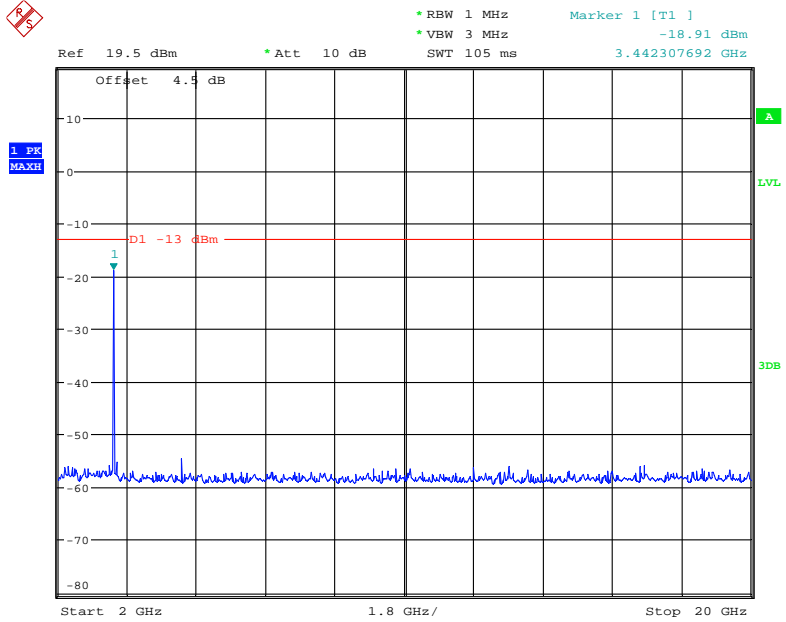
### 1 GHz – 2GHz (1.4 MHz, Middle Channel)



Fundamental test

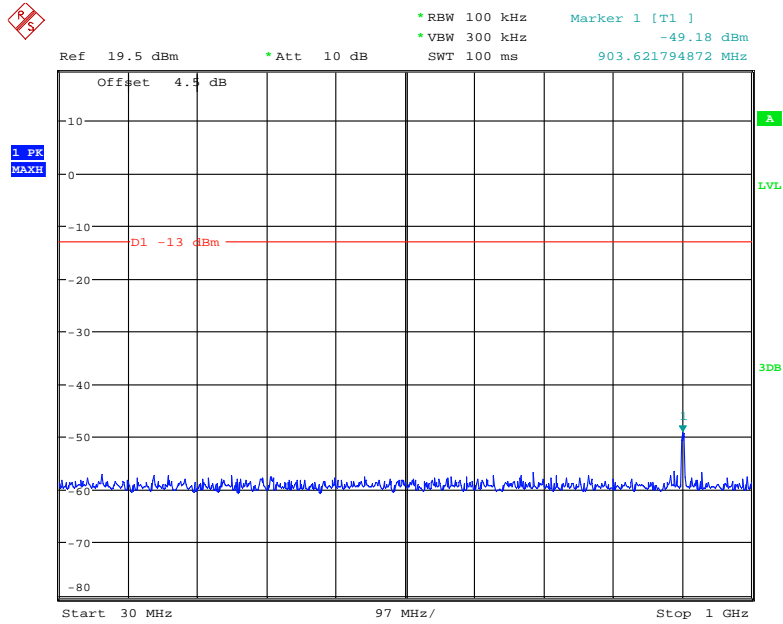
Date: 10.JAN.2018 14:35:07

### 2 GHz – 20 GHz (1.4 MHz, Middle Channel)



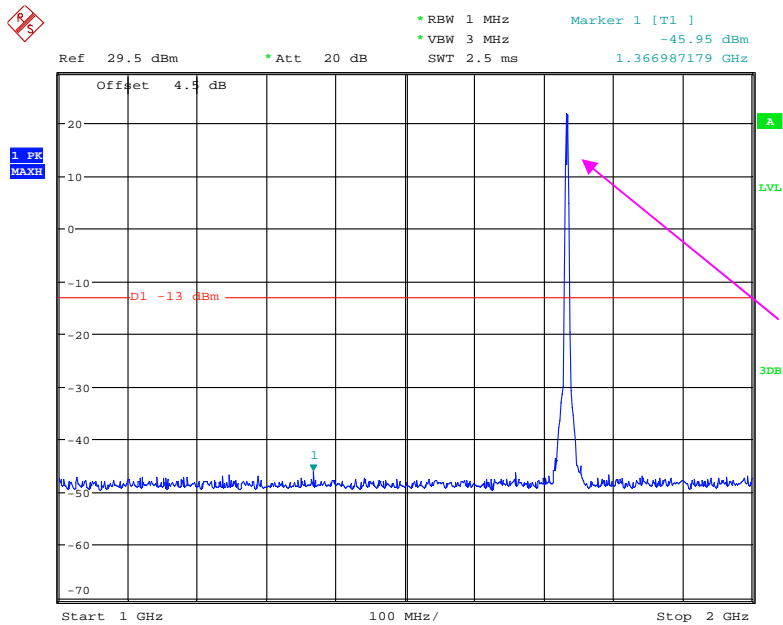
Date: 10.JAN.2018 11:48:10

### 30 MHz - 1 GHz (3.0 MHz, Middle Channel)



Date: 10.JAN.2018 11:31:47

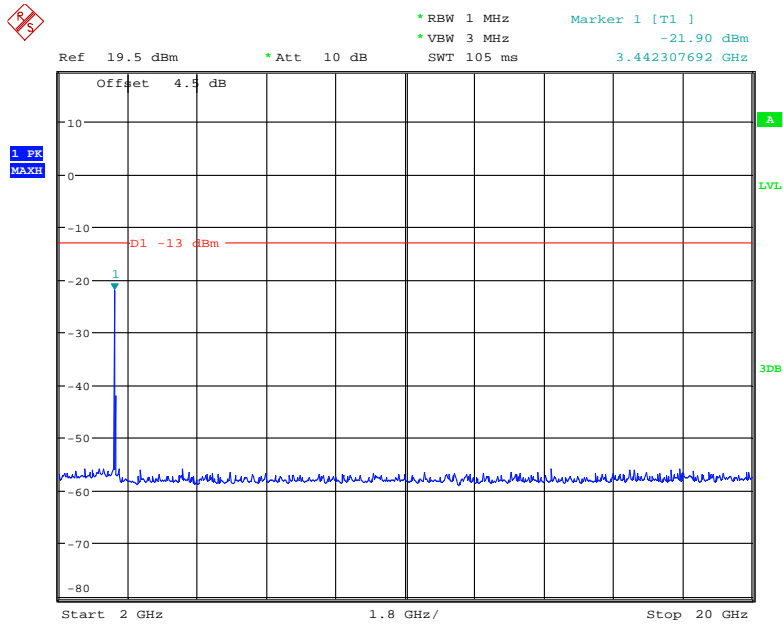
### 1 GHz - 2GHz (3.0 MHz, Middle Channel)



Fundamental test

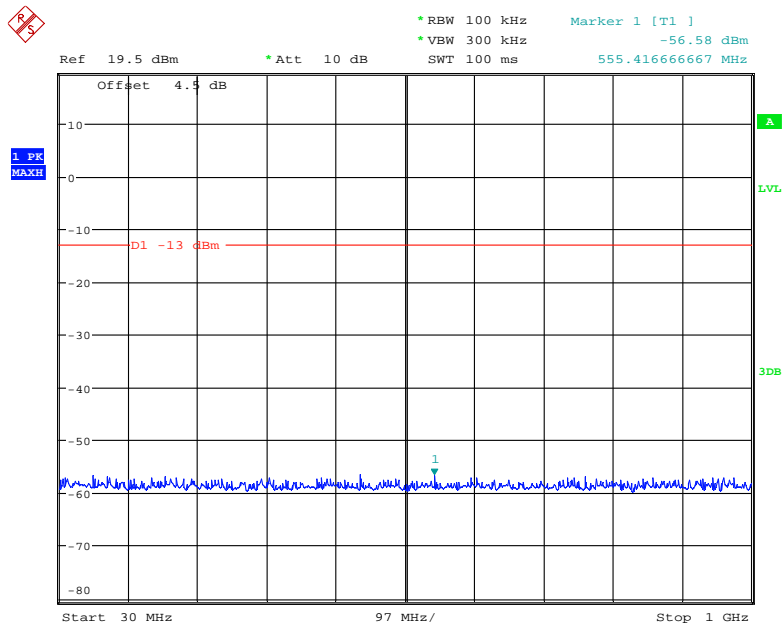
Date: 10.JAN.2018 13:14:14

### 2 GHz – 20 GHz (3.0 MHz, Middle Channel)



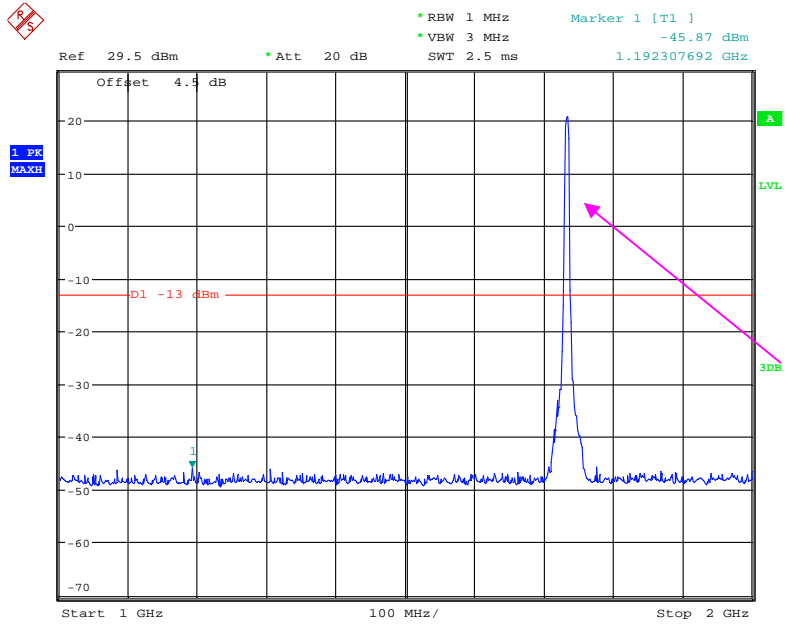
Date: 10.JAN.2018 11:48:40

### 30 MHz - 1 GHz (5.0 MHz, Middle Channel)



Date: 10.JAN.2018 11:30:45

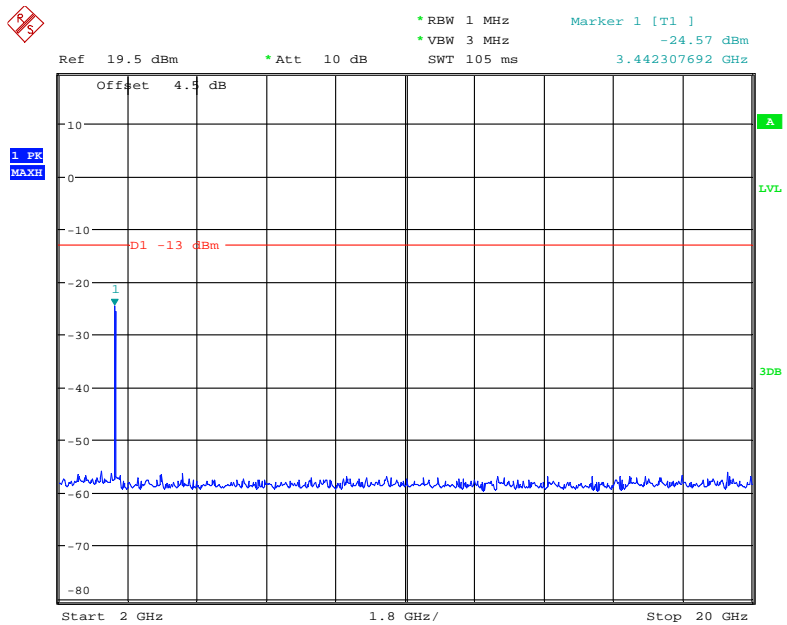
### 1 GHz – 2GHz (5.0 MHz, Middle Channel)



Fundamental test

Date: 10.JAN.2018 13:12:55

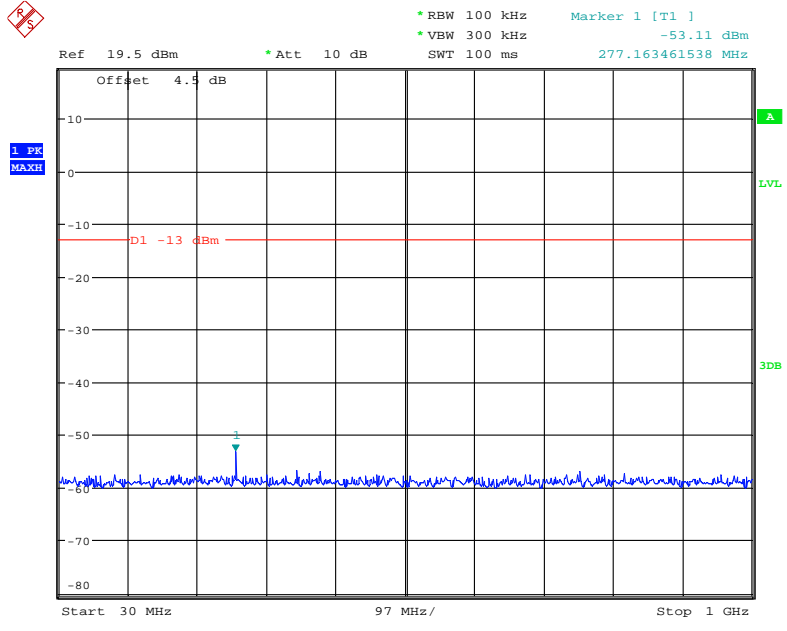
### 2 GHz – 20 GHz (5.0 MHz, Middle Channel)



Date: 10.JAN.2018 11:49:00

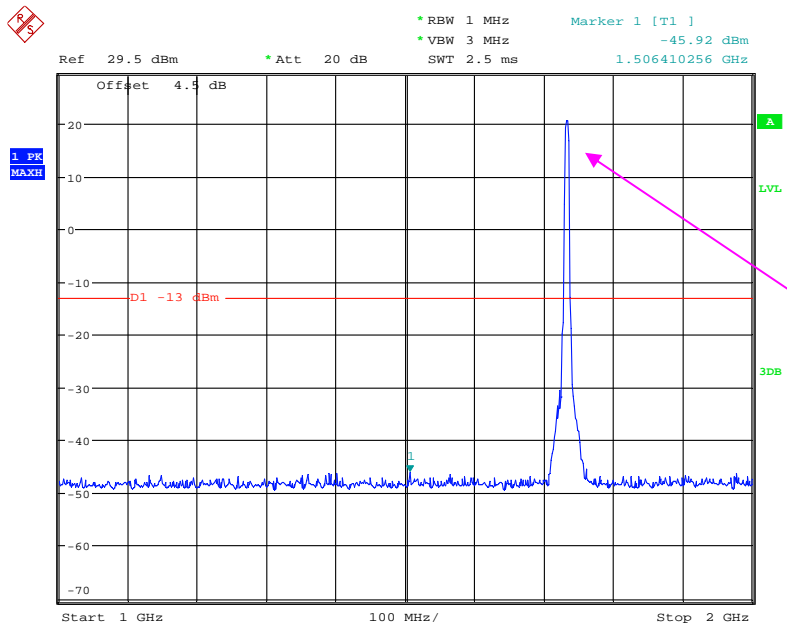


### 30 MHz - 1 GHz (10.0 MHz, Middle Channel)



Date: 10.JAN.2018 11:29:09

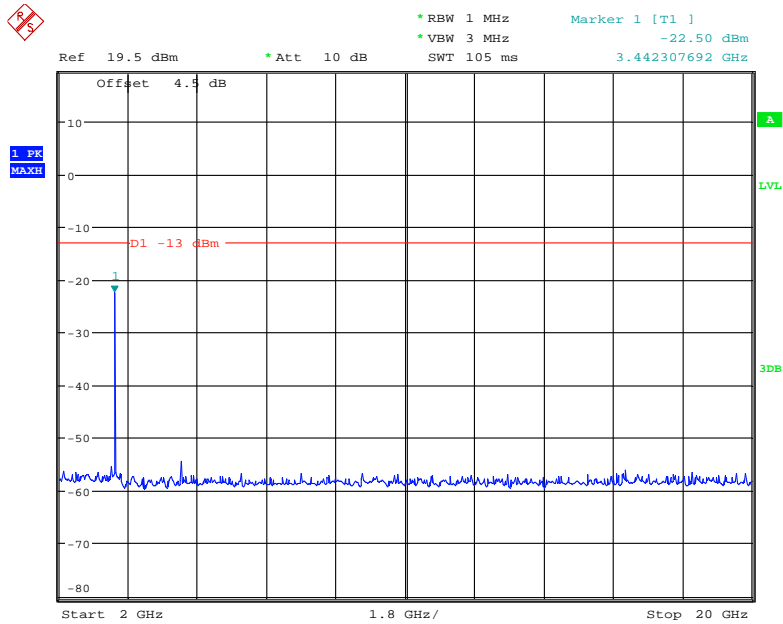
### 1 GHz - 2GHz (10.0 MHz, Middle Channel)



Fundamental test

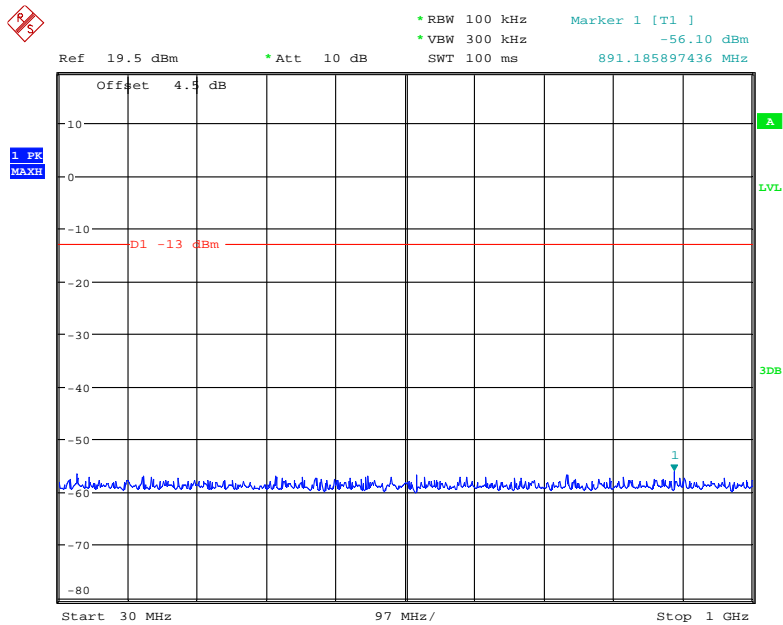
Date: 10.JAN.2018 13:13:50

### 2 GHz – 20 GHz (10.0 MHz, Middle Channel)



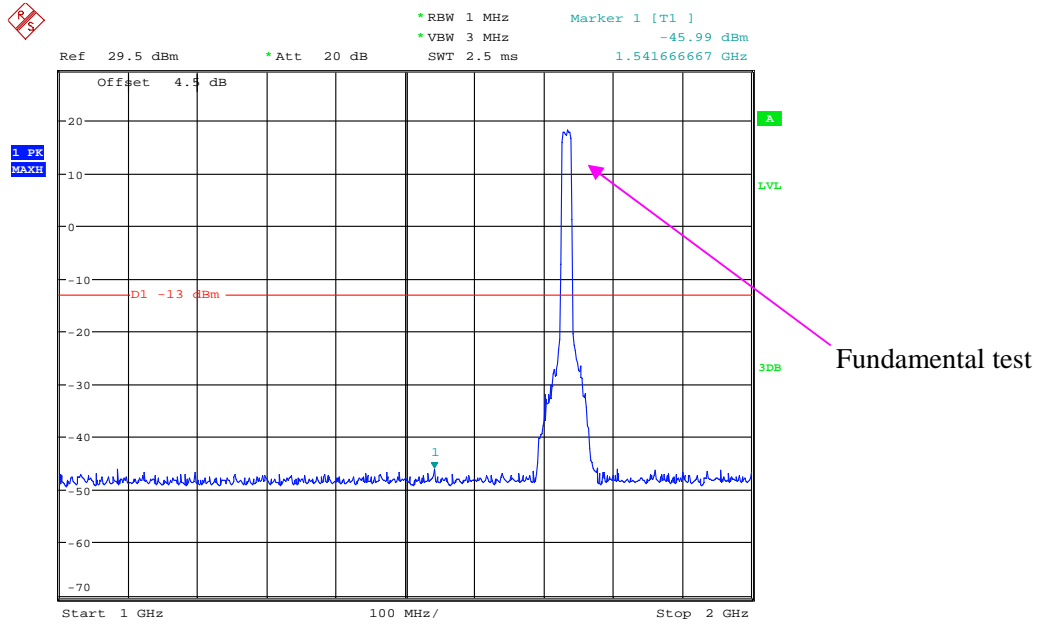
Date: 10.JAN.2018 11:49:14

### 30 MHz - 1 GHz (15.0 MHz, Middle Channel)

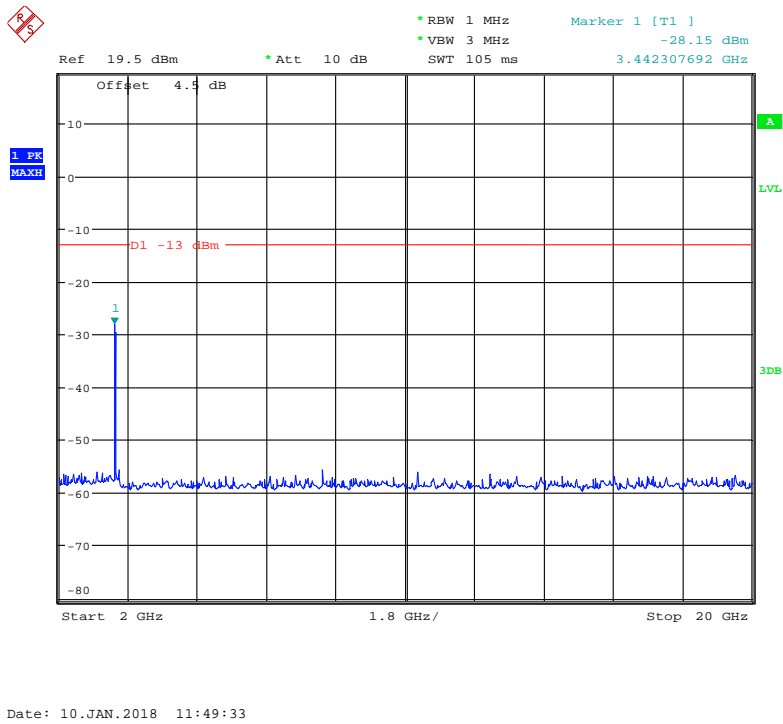


Date: 10.JAN.2018 11:28:01

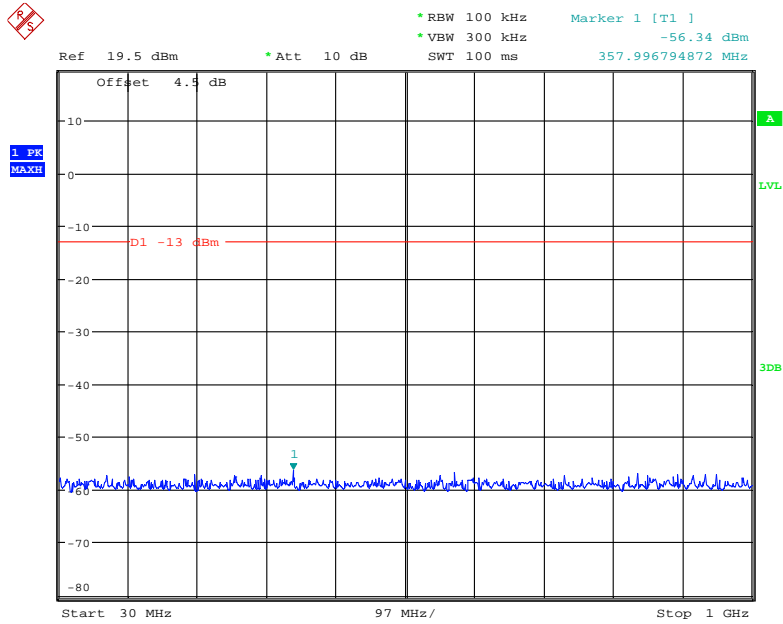
### 1 GHz – 2GHz (15.0 MHz, Middle Channel)



### 2 GHz – 20 GHz (15.0 MHz, Middle Channel)

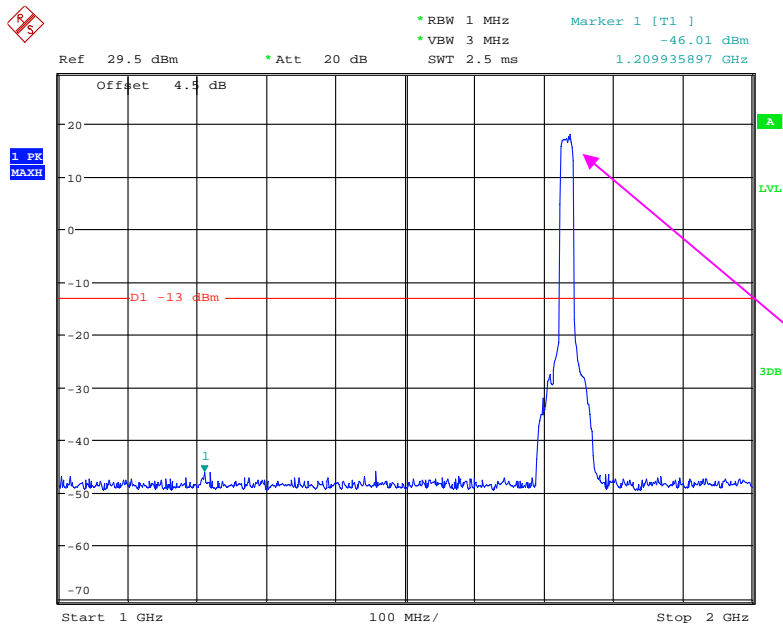


### 30 MHz - 1 GHz (20.0 MHz, Middle Channel)



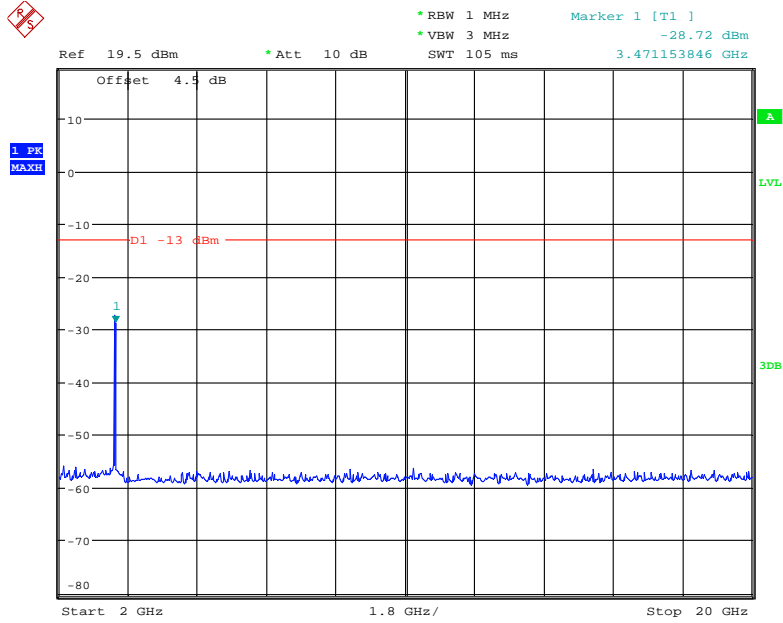
Date: 10.JAN.2018 11:27:19

### 1 GHz - 2GHz (20.0 MHz, Middle Channel)



Date: 10.JAN.2018 13:11:23

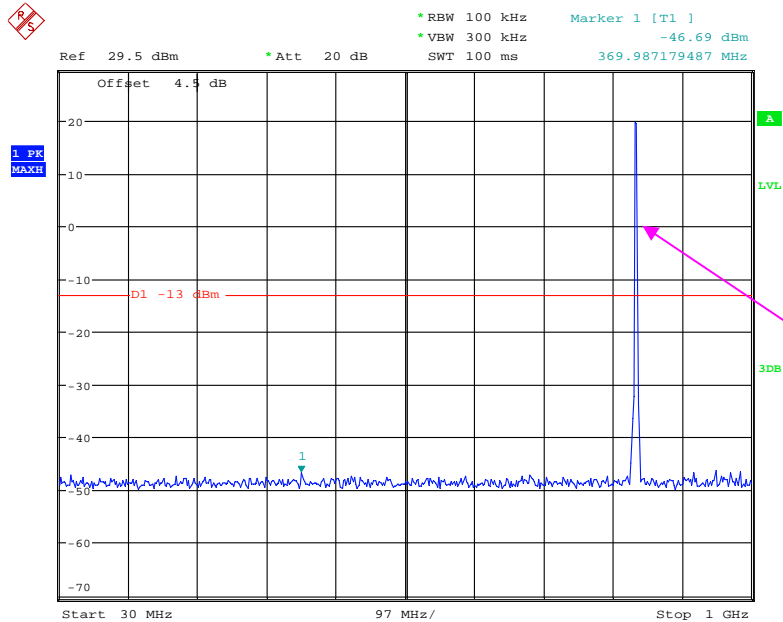
### 2 GHz – 20 GHz (20.0 MHz, Middle Channel)



Date: 10.JAN.2018 11:50:15

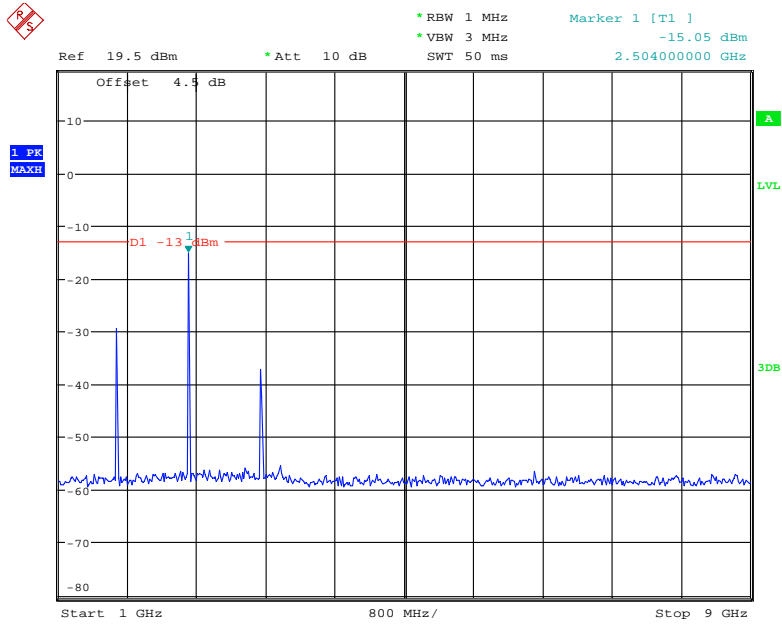
### LTE Band 5:

### 30 MHz - 1 GHz (1.4 MHz, Middle Channel)



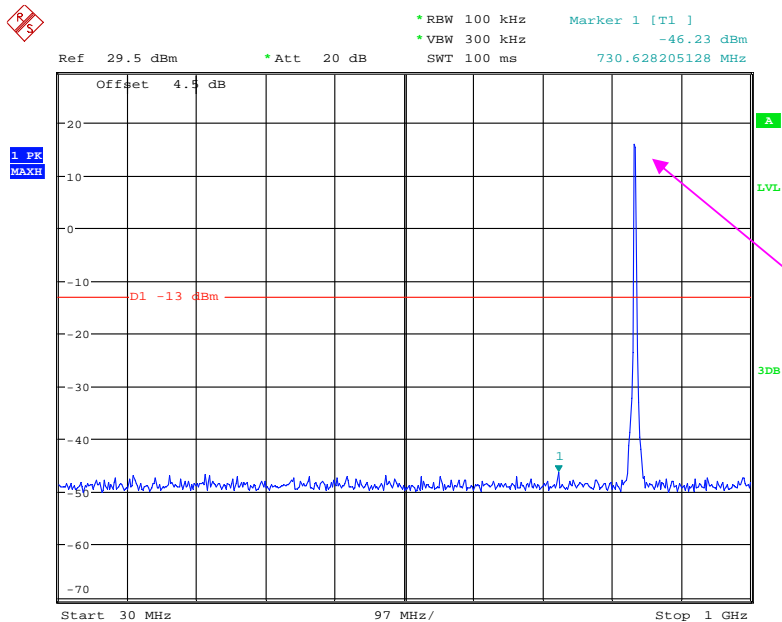
Date: 10.JAN.2018 15:01:44

### 1 GHz – 9 GHz (1.4 MHz, Middle Channel)



Date: 10.JAN.2018 14:48:22

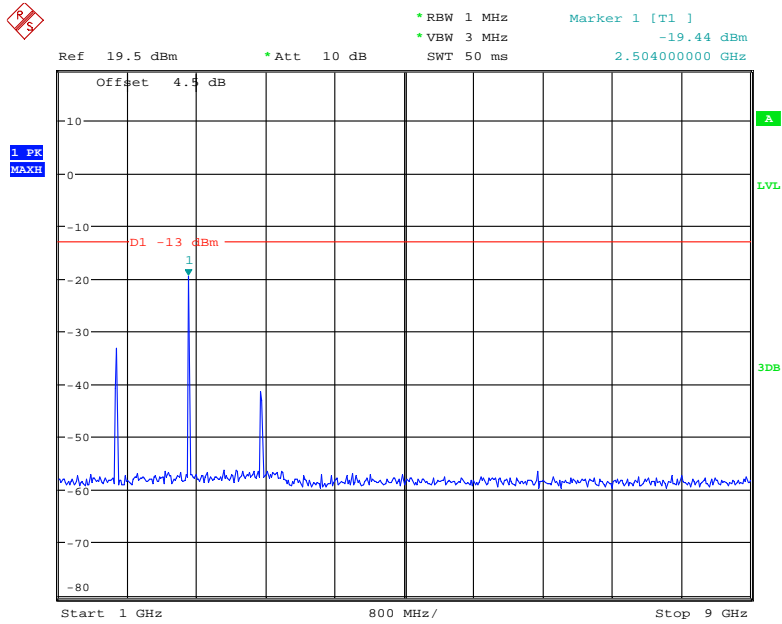
### 30 MHz - 1 GHz (3.0 MHz, Middle Channel)



Fundamental test

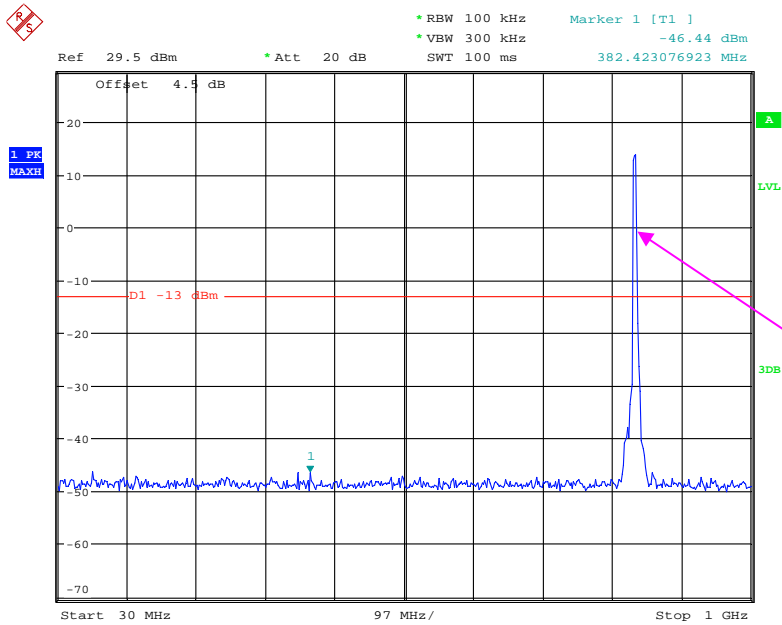
Date: 10.JAN.2018 15:01:20

### 1 GHz – 9 GHz (3.0 MHz, Middle Channel)



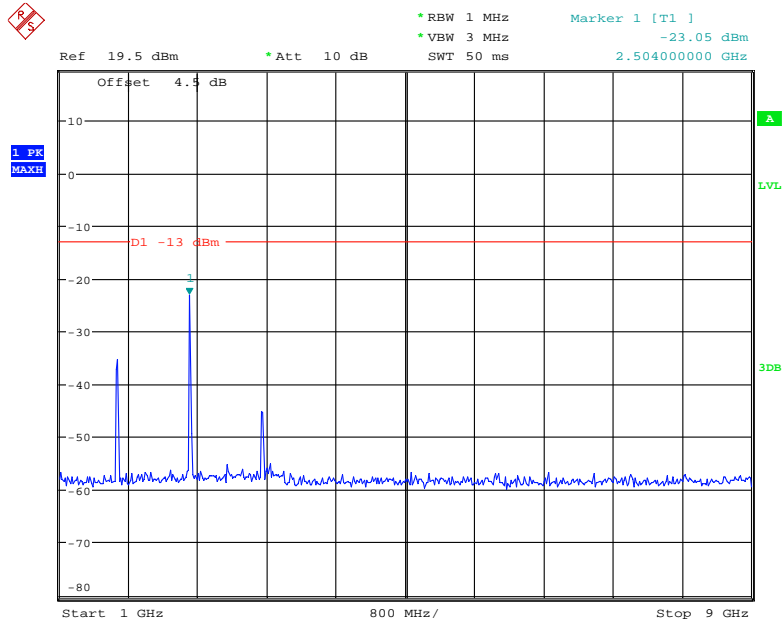
Date: 10.JAN.2018 14:48:48

### 30 MHz - 1 GHz (5.0 MHz, Middle Channel)



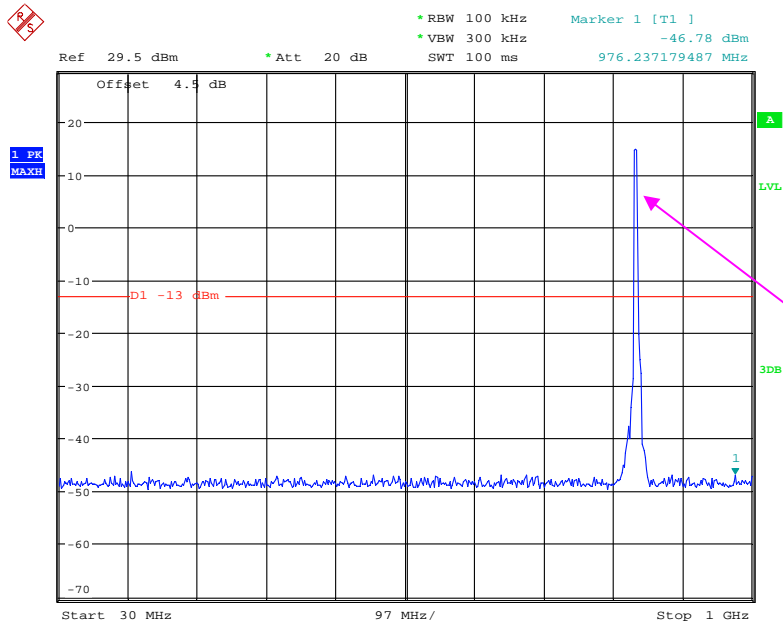
Date: 10.JAN.2018 15:00:43

### 1 GHz – 9 GHz (5.0 MHz, Middle Channel)



Date: 10.JAN.2018 14:49:03

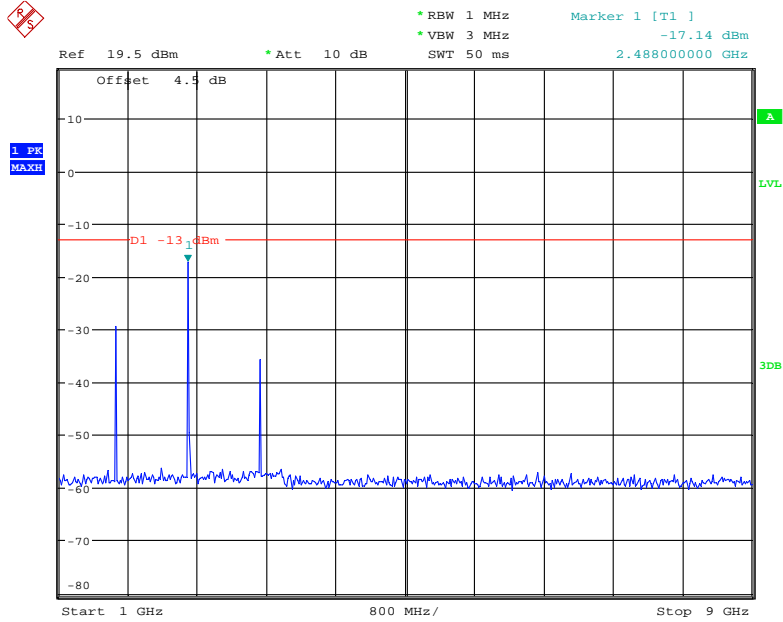
### 30 MHz - 1 GHz (10.0 MHz, Middle Channel)



Date: 10.JAN.2018 15:00:03



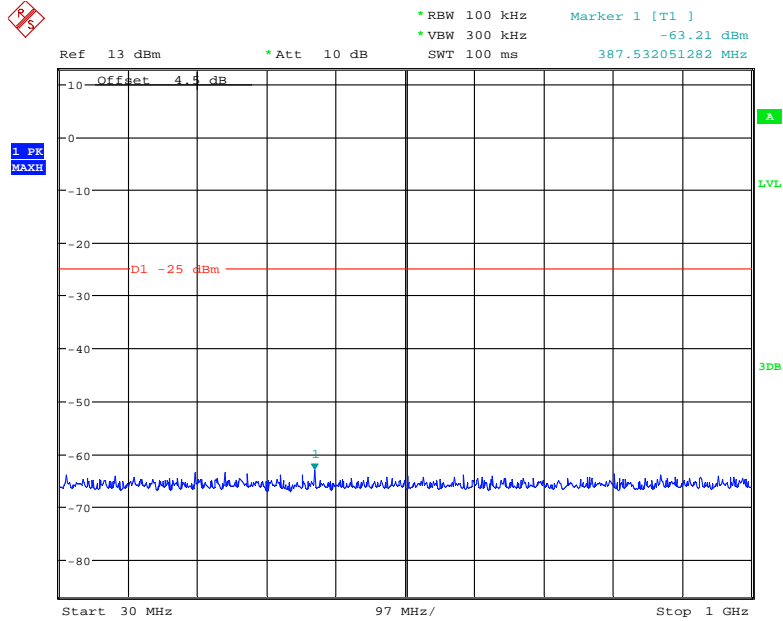
### 1 GHz – 9 GHz (10.0 MHz, Middle Channel)



Date: 10.JAN.2018 14:49:21

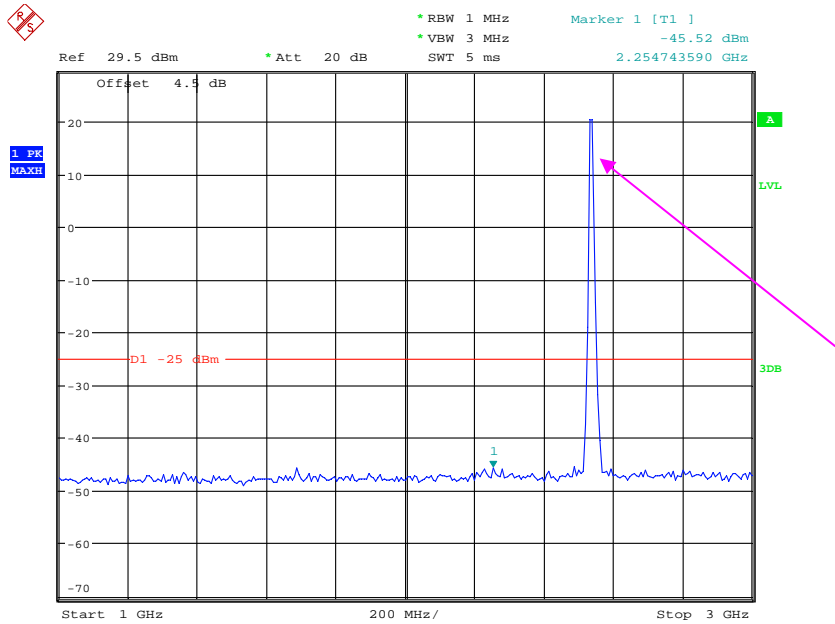
### LTE Band 7:

### 30 MHz – 1 GHz (5.0 MHz, Middle Channel)



Date: 1.FEB.2018 13:28:45

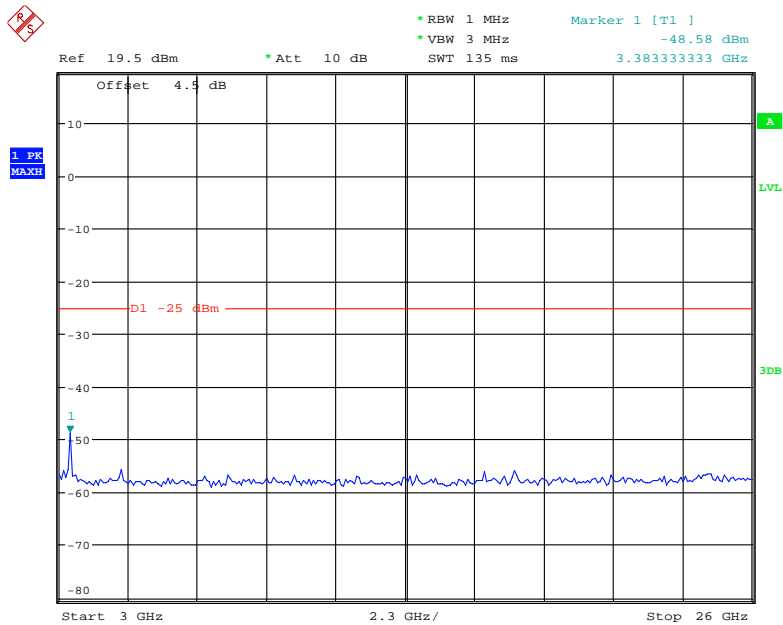
### 1 GHz – 3GHz (5.0 MHz, Middle Channel)



Fundamental test

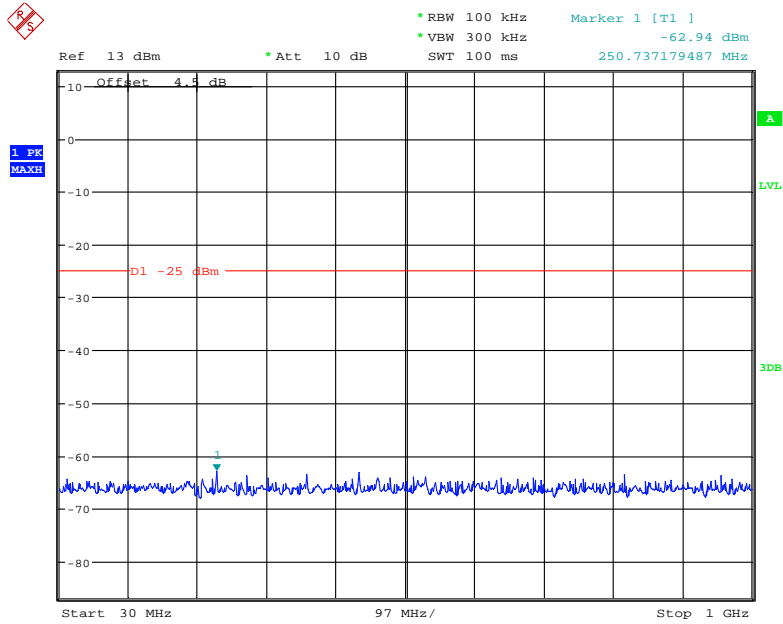
Date: 1.FEB.2018 09:22:47

### 3 GHz – 26 GHz (5.0 MHz, Middle Channel)



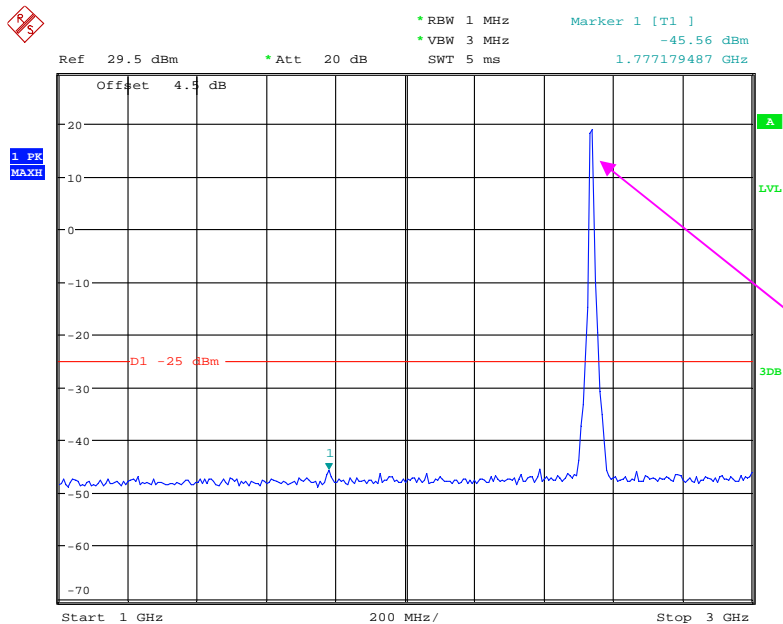
Date: 1.FEB.2018 09:23:14

### 30 MHz – 1 GHz (10.0 MHz, Middle Channel)



Date: 1.FEB.2018 13:28:33

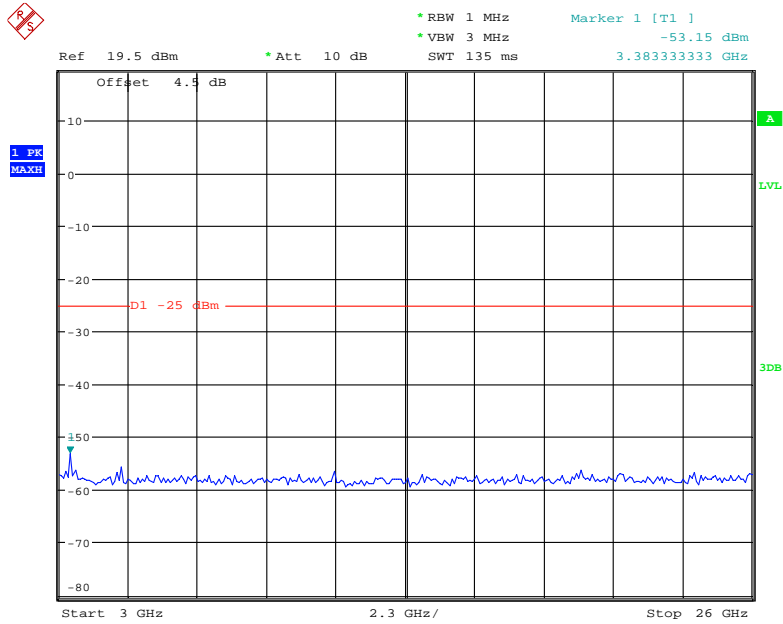
### 1 GHz – 3GHz (10.0 MHz, Middle Channel)



Fundamental test

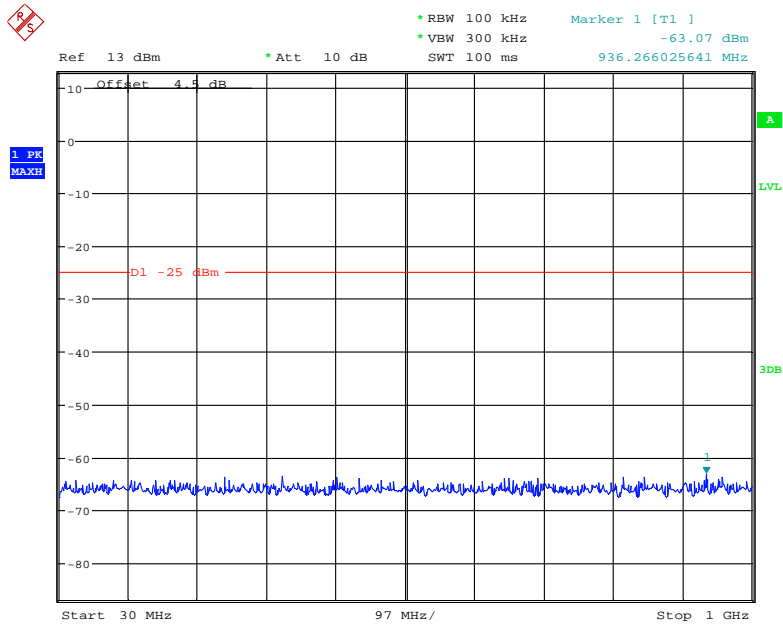
Date: 1.FEB.2018 09:22:25

### 3 GHz – 26 GHz (10.0 MHz, Middle Channel)



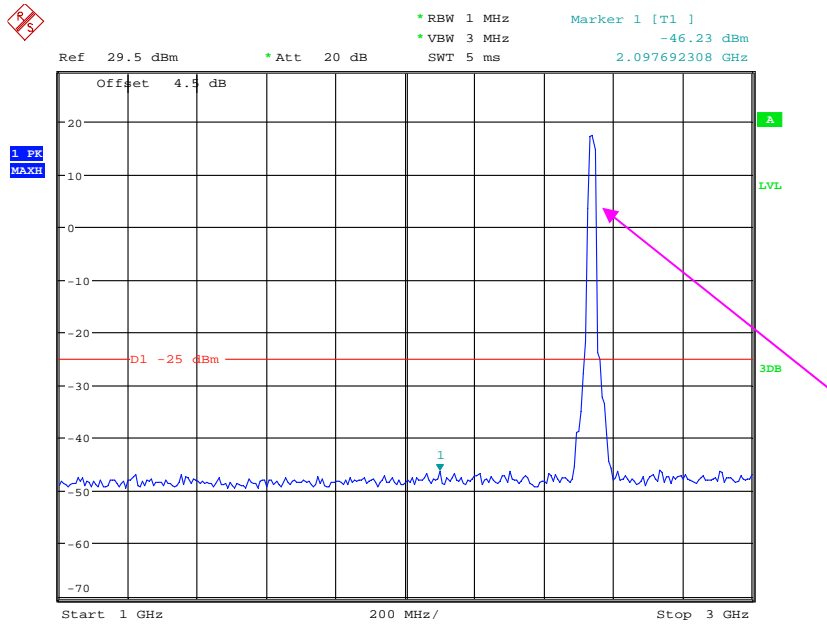
Date: 1.FEB.2018 09:23:27

### 30 MHz – 1 GHz (15.0 MHz, Middle Channel)



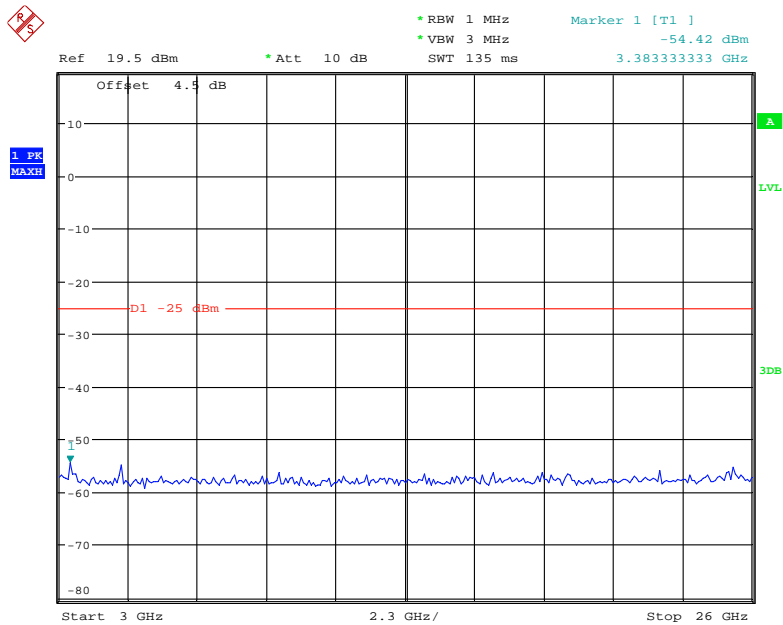
Date: 1.FEB.2018 13:28:23

### 1 GHz – 3GHz (15.0 MHz, Middle Channel)



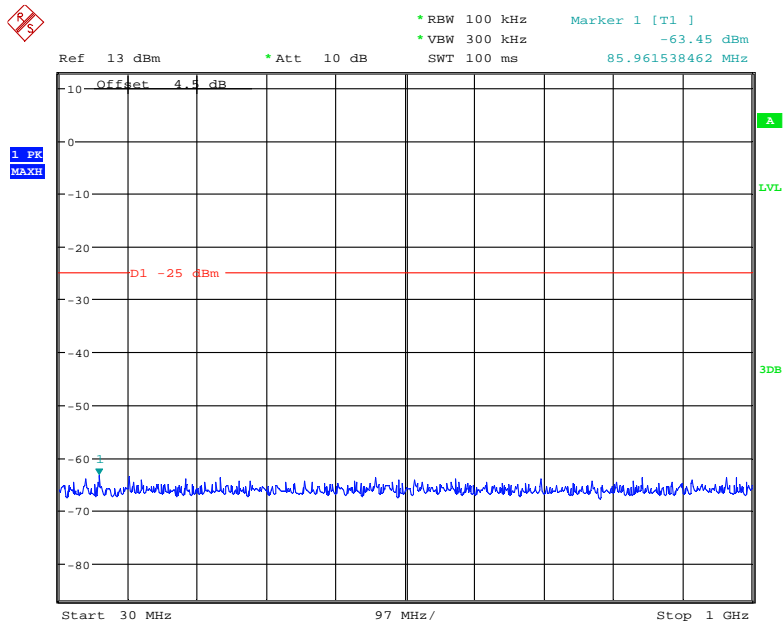
Date: 1.FEB.2018 09:21:59

### 3 GHz – 26 GHz (15.0 MHz, Middle Channel)



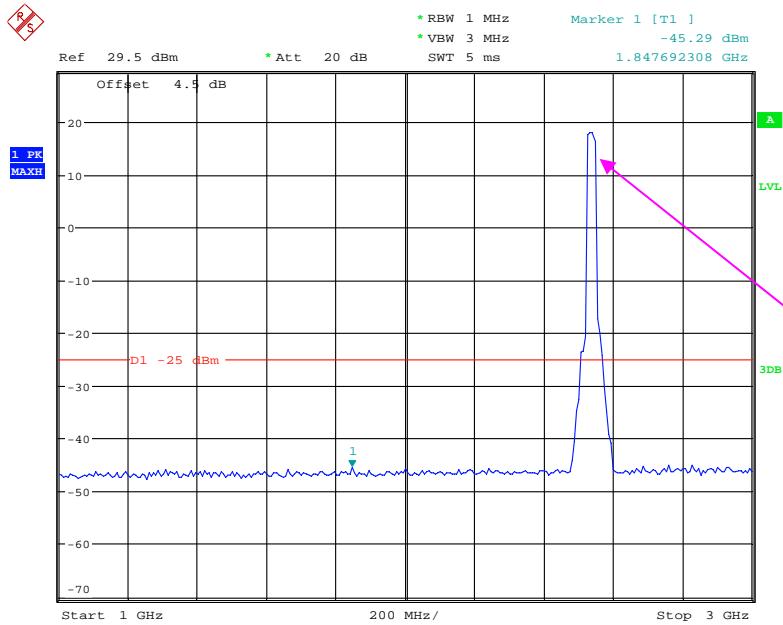
Date: 1.FEB.2018 09:23:42

### 30 MHz – 1 GHz (20.0 MHz, Middle Channel)



Date: 1.FEB.2018 13:28:14

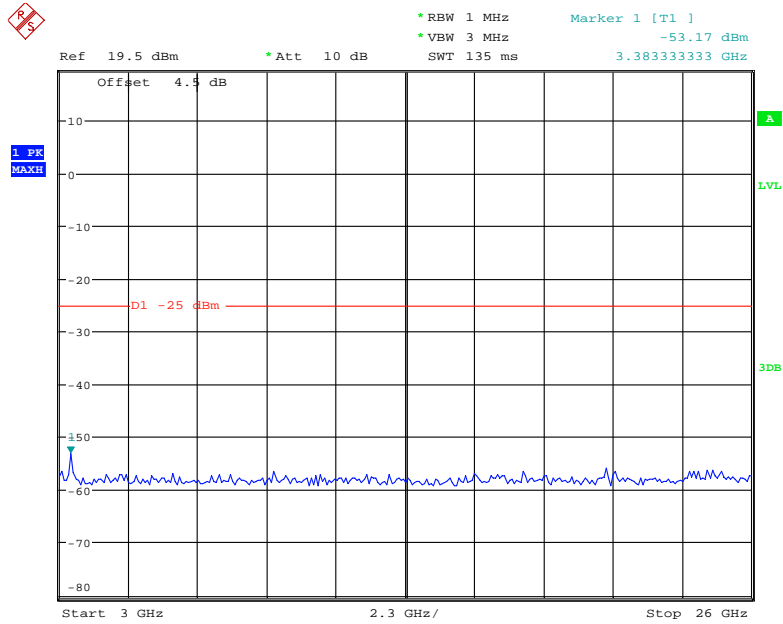
### 1 GHz – 3GHz (20.0 MHz, Middle Channel)



Fundamental test

Date: 1.FEB.2018 09:21:39

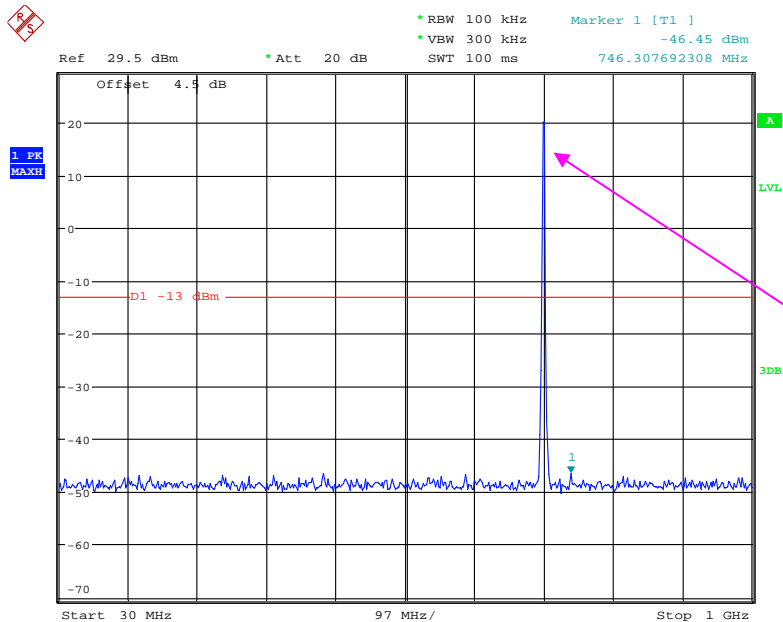
### 3 GHz – 26 GHz (20.0 MHz, Middle Channel)



Date: 1.FEB.2018 09:23:56

### LTE Band 12:

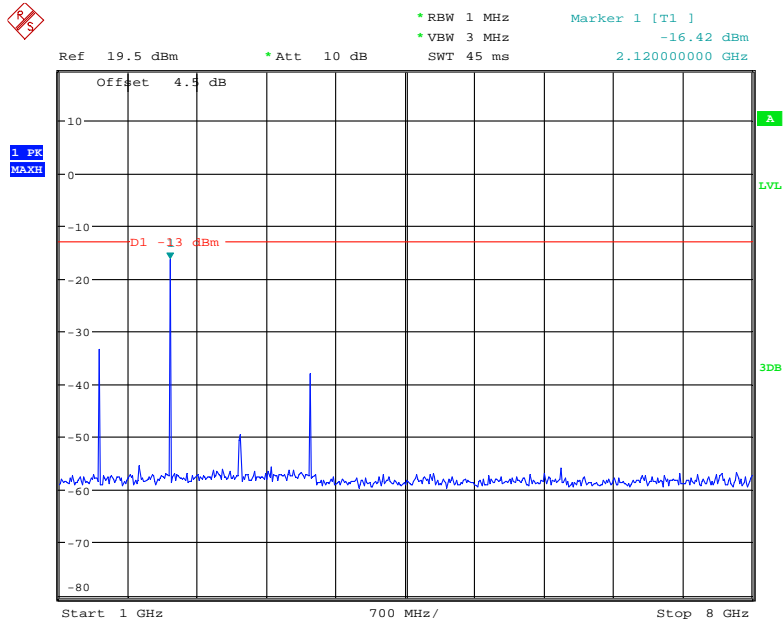
### 30 MHz - 1 GHz (1.4 MHz, Middle Channel)



Fundamental test

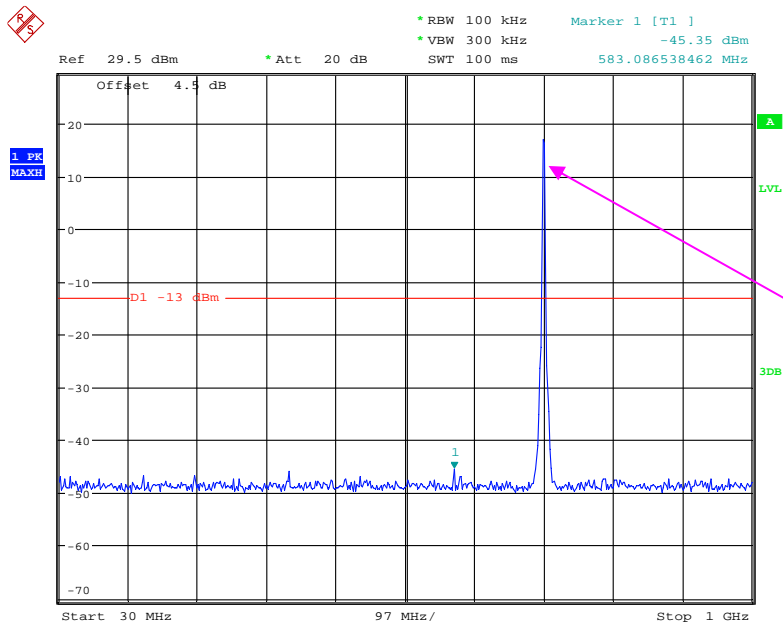
Date: 10.JAN.2018 14:36:02

### 1 GHz – 8 GHz (1.4 MHz, Middle Channel)



Date: 10.JAN.2018 14:46:25

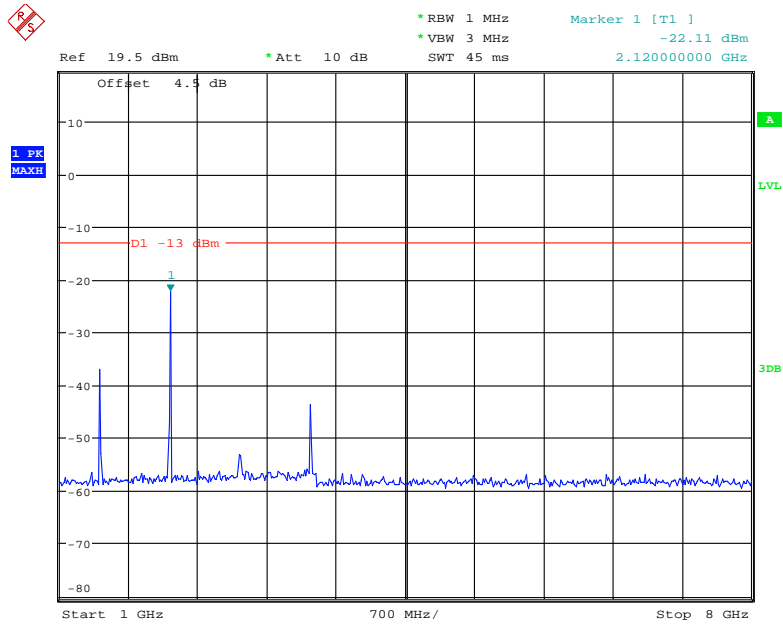
### 30 MHz – 1 GHz (3.0 MHz, Middle Channel)



Date: 10.JAN.2018 14:36:51

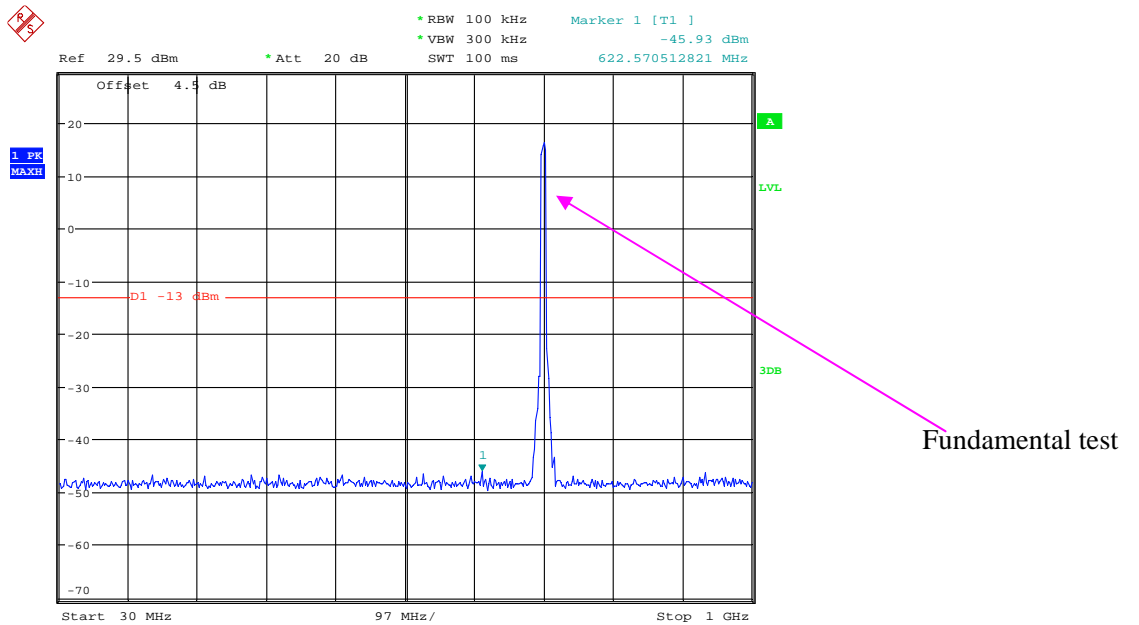


### 1 GHz – 8 GHz (3.0 MHz, Middle Channel)



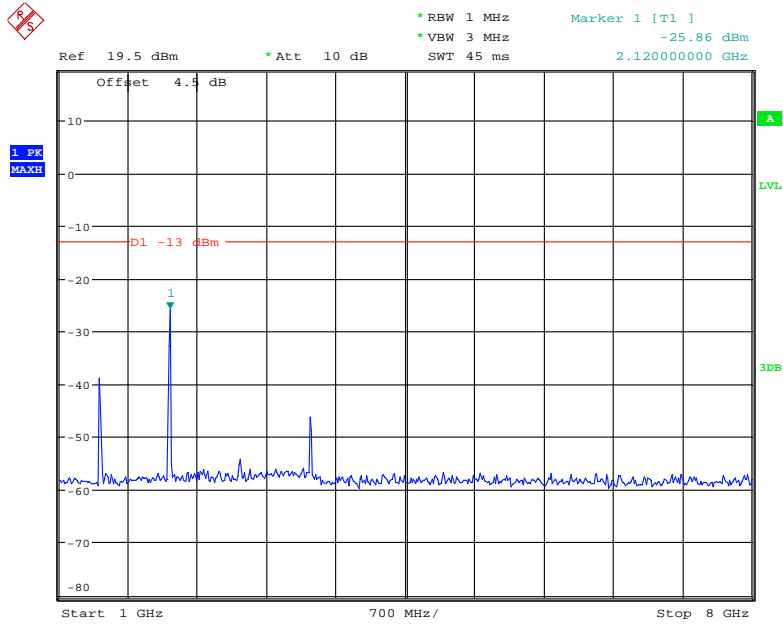
Date: 10.JAN.2018 14:46:11

### 30 MHz – 1.0 GHz (5.0 MHz, Middle Channel)



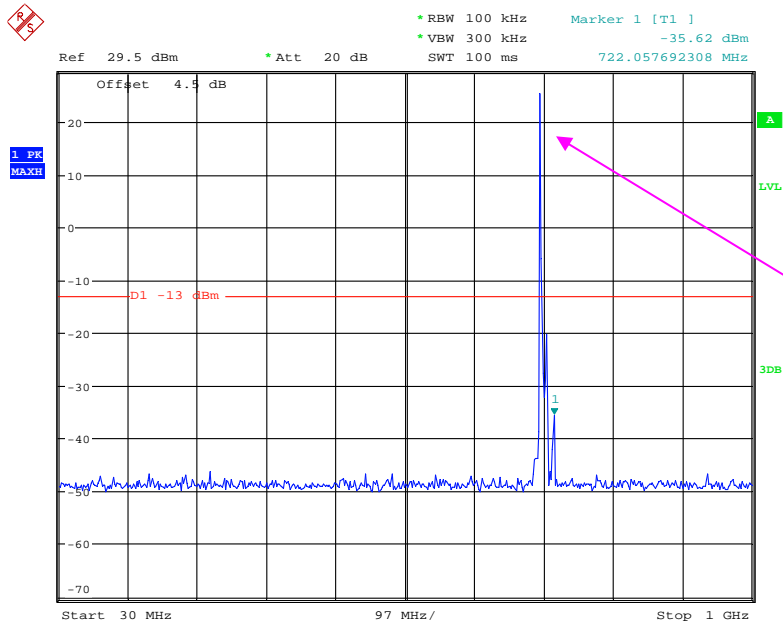
Date: 10.JAN.2018 14:37:27

### 1 GHz – 8GHz (5.0 MHz, Middle Channel)



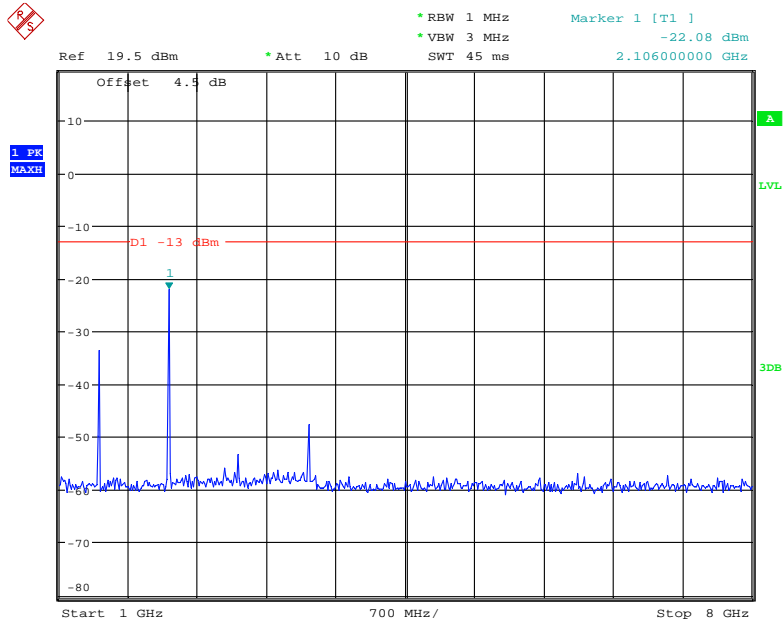
Date: 10.JAN.2018 14:45:55

### 30 MHz – 1.0 GHz (10.0 MHz, Middle Channel)



Date: 10.JAN.2018 14:37:58

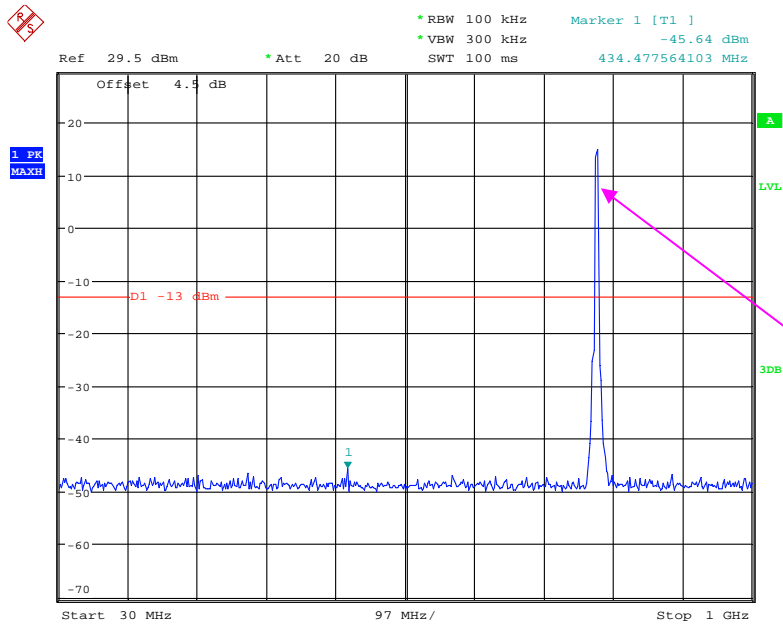
**1 GHz – 8 GHz (10.0 MHz, Middle Channel)**



Date: 10.JAN.2018 14:45:35

**LTE Band 13:**

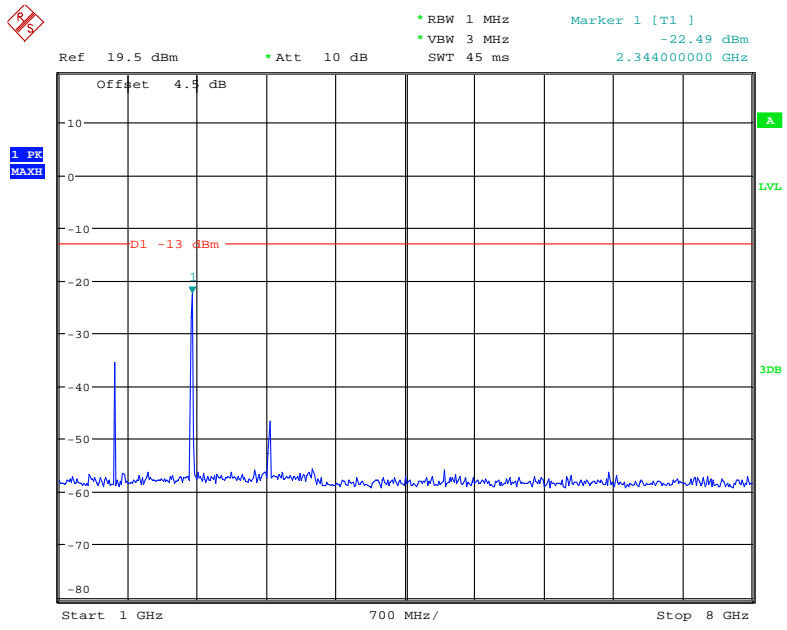
**30 MHz – 1.0 GHz (5.0 MHz, Middle Channel)**



Fundamental test

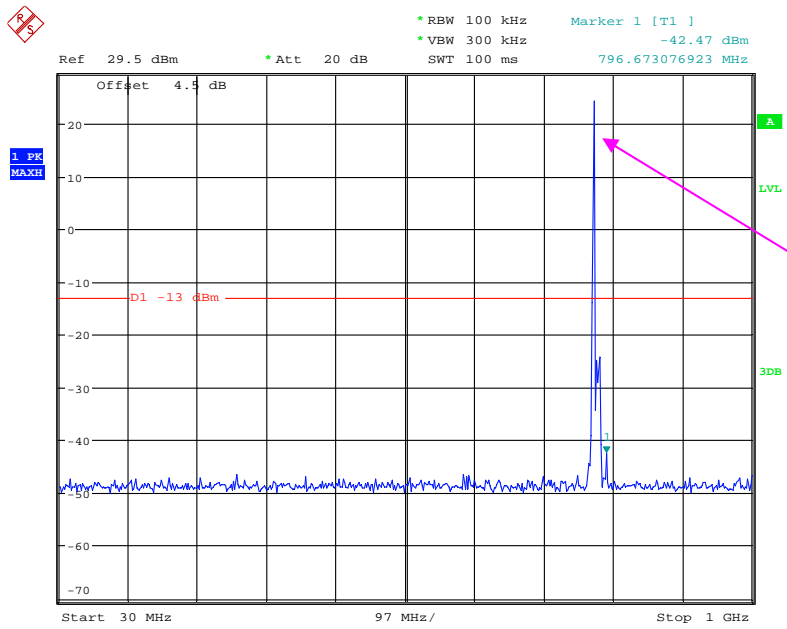
Date: 10.JAN.2018 14:38:30

### 1 GHz – 8GHz (5.0 MHz, Middle Channel)



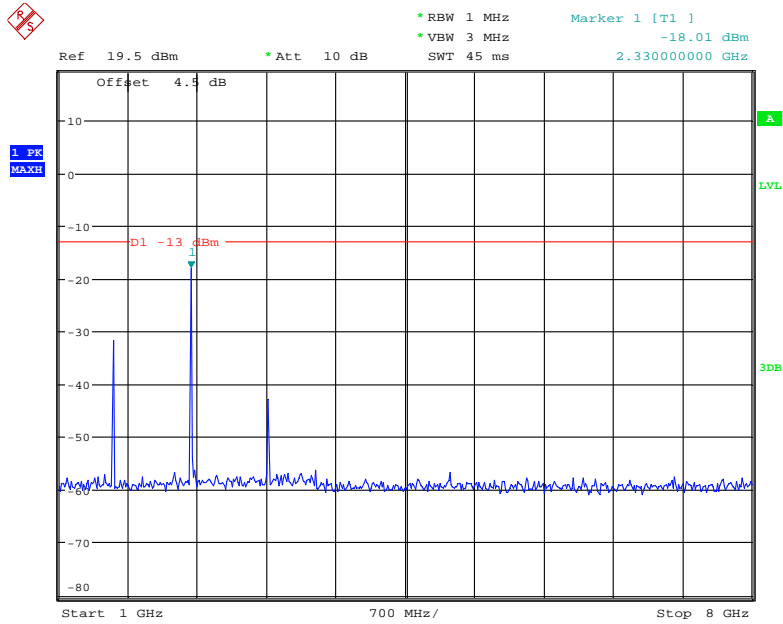
Date: 10.JAN.2018 14:44:48

### 30 MHz – 1.0 GHz (10.0 MHz, Middle Channel)



Date: 10.JAN.2018 14:39:10

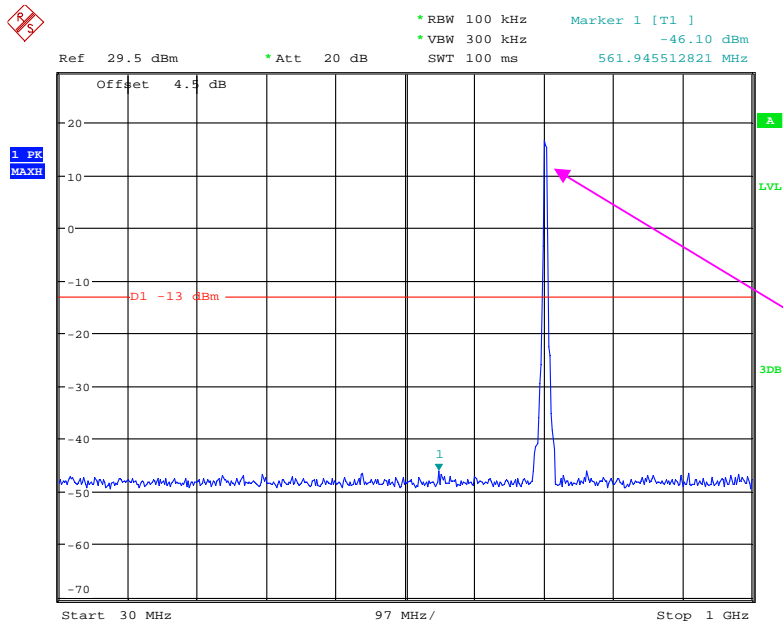
### 1 GHz – 8 GHz (10.0 MHz, Middle Channel)



Date: 10.JAN.2018 14:44:13

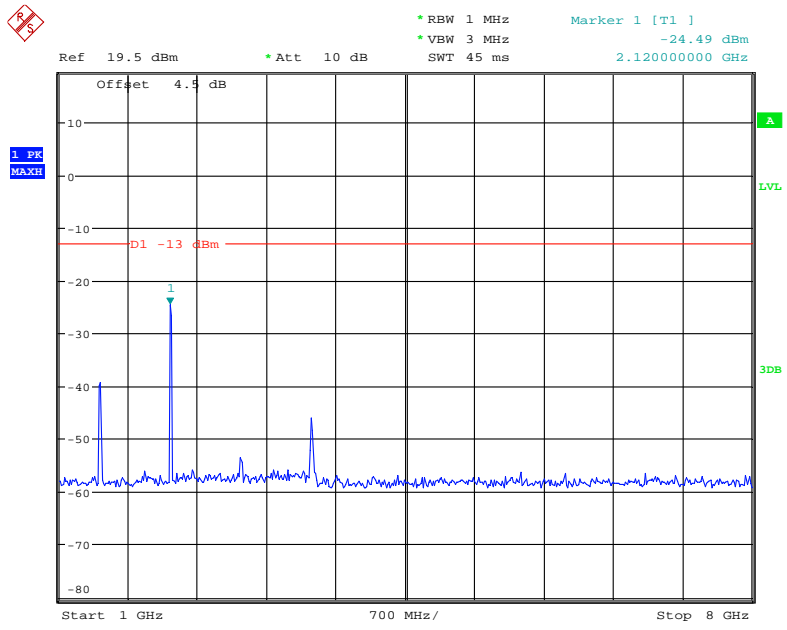
### LTE Band 17:

### 30 MHz – 1.0 GHz (5.0 MHz, Middle Channel)



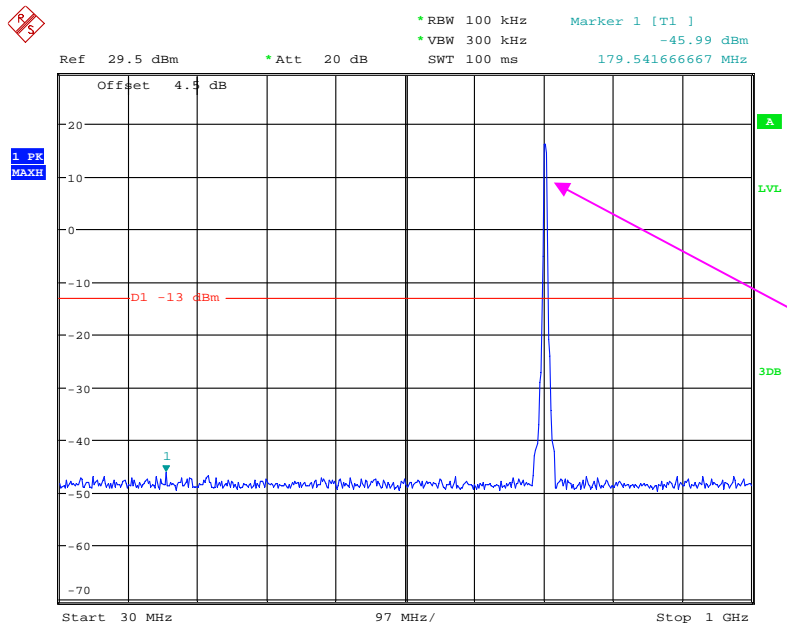
Date: 10.JAN.2018 14:41:03

### 1 GHz – 8GHz (5.0 MHz, Middle Channel)



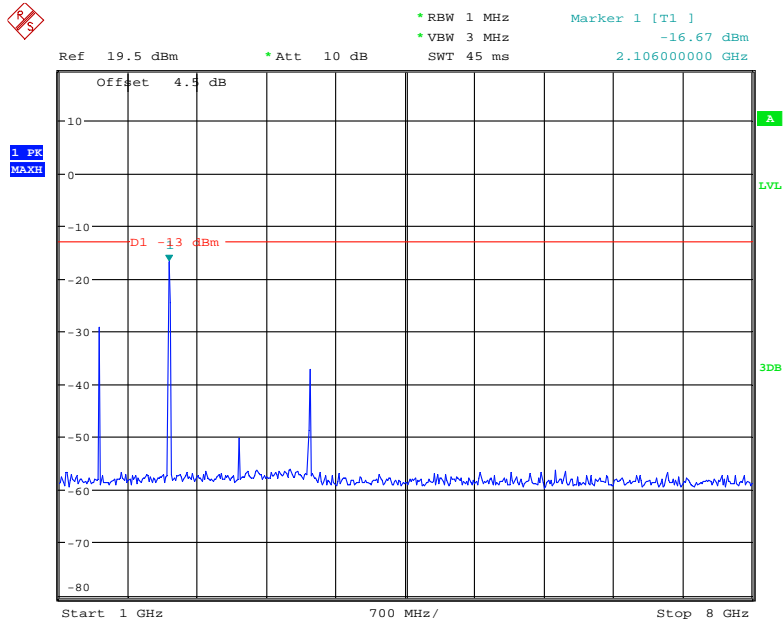
Date: 10.JAN.2018 14:42:51

### 30 MHz – 1.0 GHz (10.0 MHz, Middle Channel)



Date: 10.JAN.2018 14:42:13

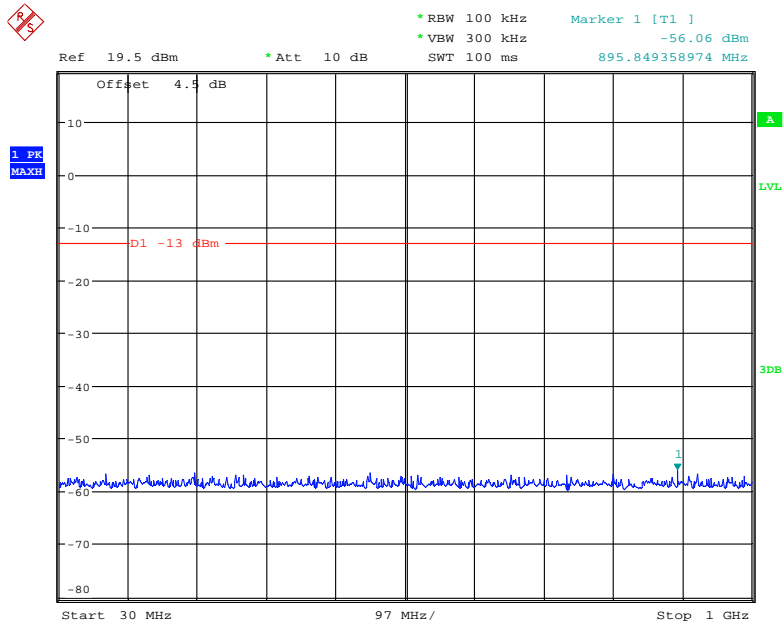
### 1 GHz – 8 GHz (10.0 MHz, Middle Channel)



Date: 10.JAN.2018 14:43:20

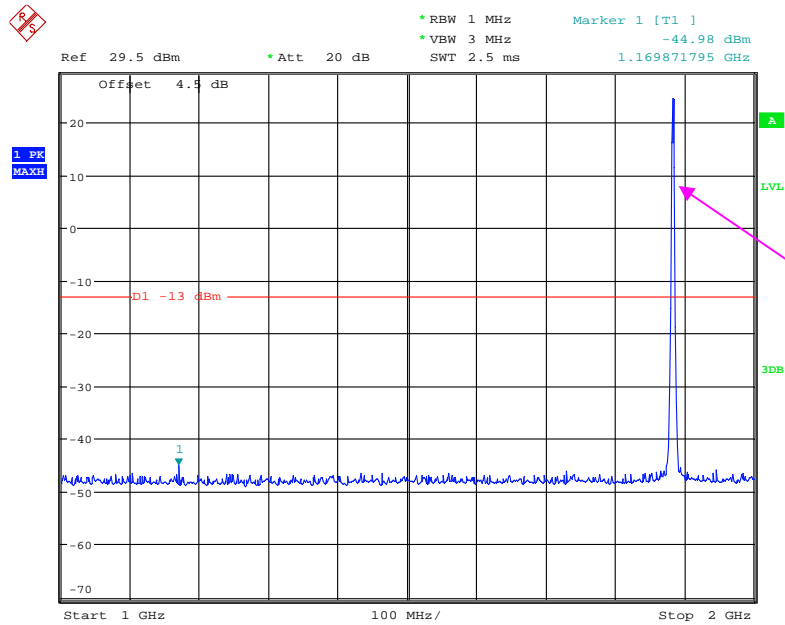
### LTE Band 25:

### 30 MHz - 1 GHz (1.4 MHz, Middle Channel)



Date: 10.JAN.2018 11:34:00

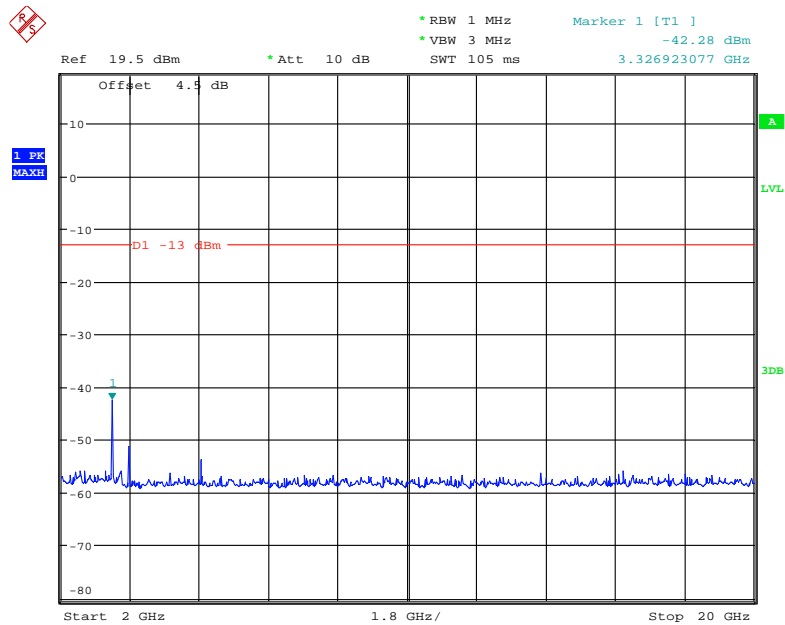
### 1 GHz – 2GHz (1.4 MHz, Middle Channel)



Fundamental test

Date: 10.JAN.2018 13:16:07

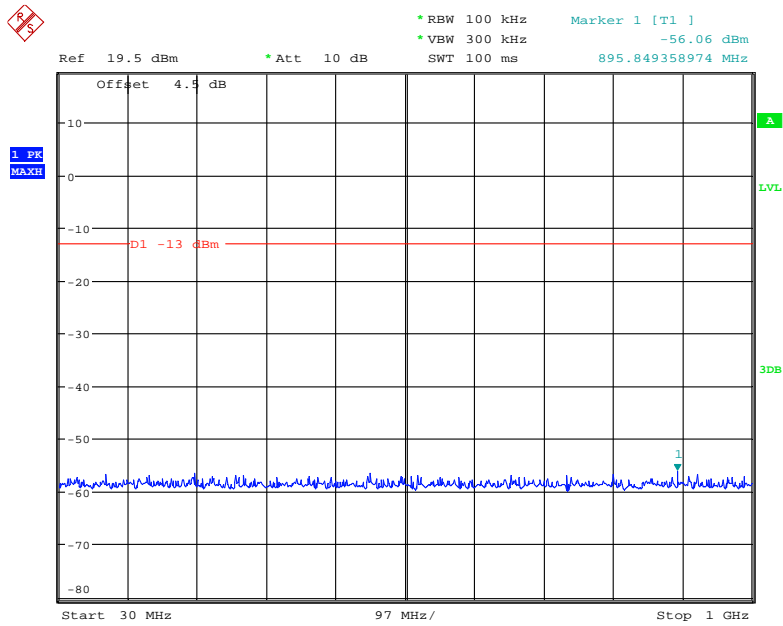
### 2 GHz – 20 GHz (1.4 MHz, Middle Channel)



Date: 10.JAN.2018 11:47:21

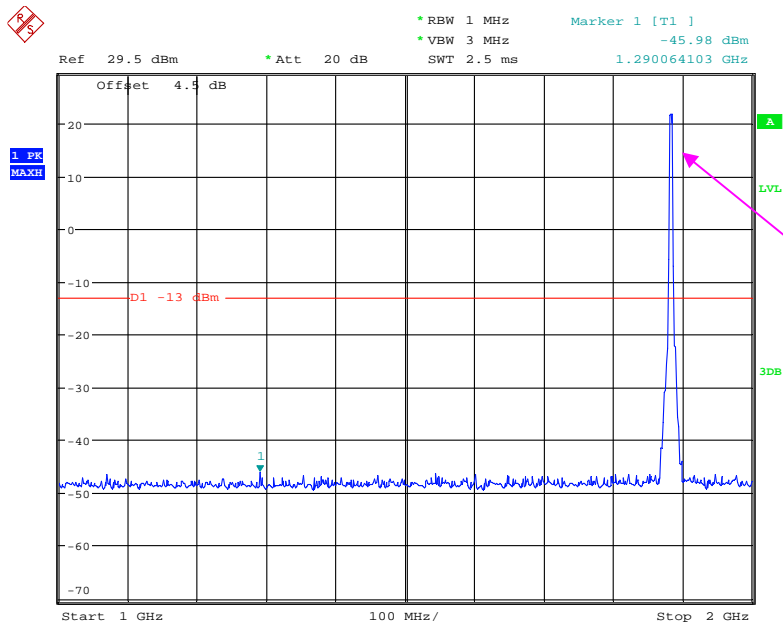


### 30 MHz - 1 GHz (3.0 MHz, Middle Channel)



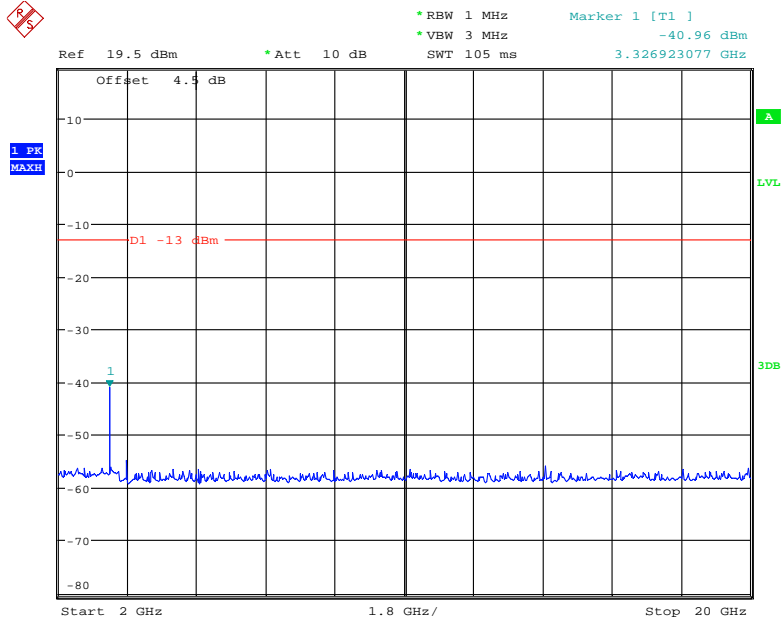
Date: 10.JAN.2018 11:34:00

### 1 GHz - 2GHz (3.0 MHz, Middle Channel)



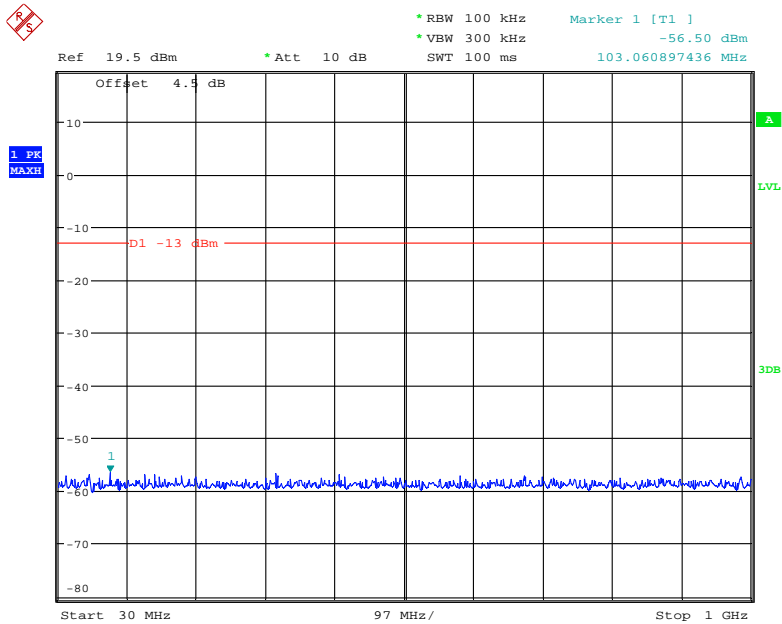
Date: 10.JAN.2018 13:16:39

### 2 GHz – 20 GHz (3.0 MHz, Middle Channel)



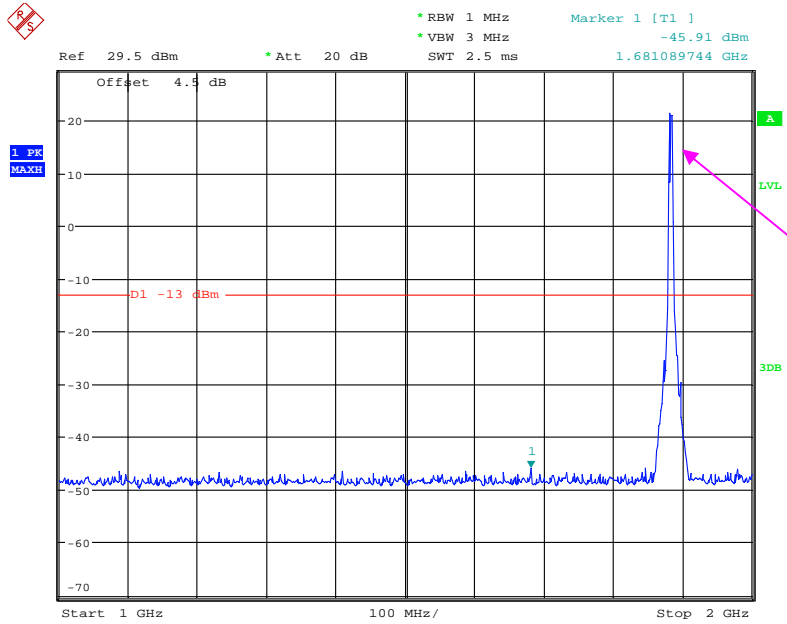
Date: 10.JAN.2018 11:47:03

### 30 MHz - 1 GHz (5.0 MHz, Middle Channel)



Date: 10.JAN.2018 11:37:39

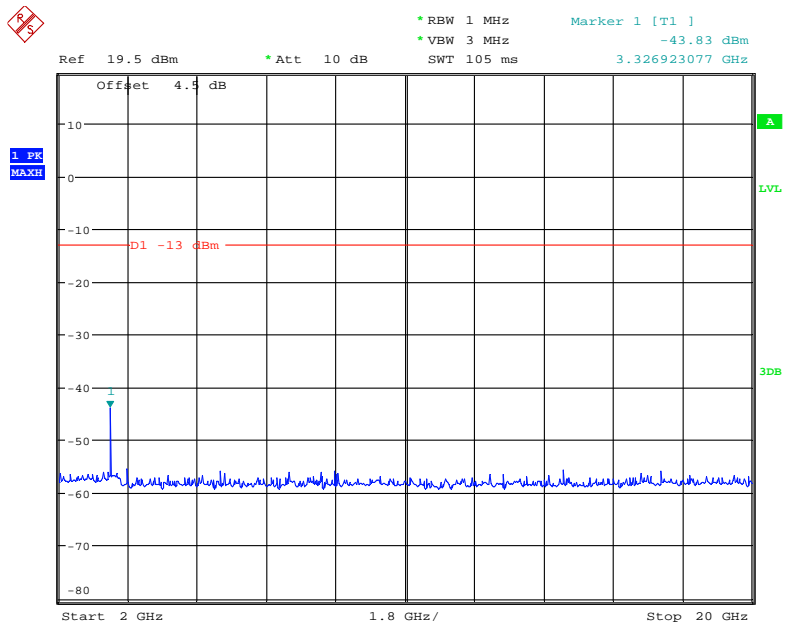
### 1 GHz – 2GHz (5.0 MHz, Middle Channel)



Fundamental test

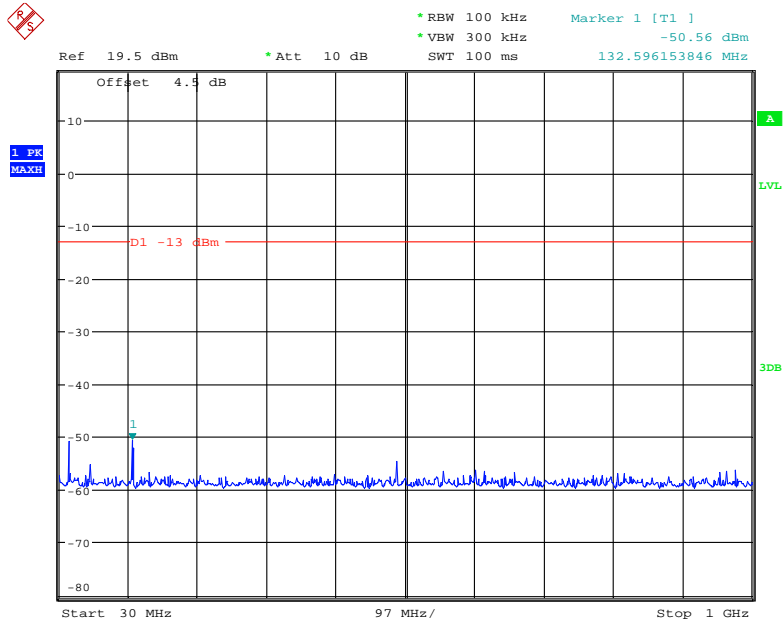
Date: 10.JAN.2018 13:17:11

### 2 GHz – 20 GHz (5.0 MHz, Middle Channel)



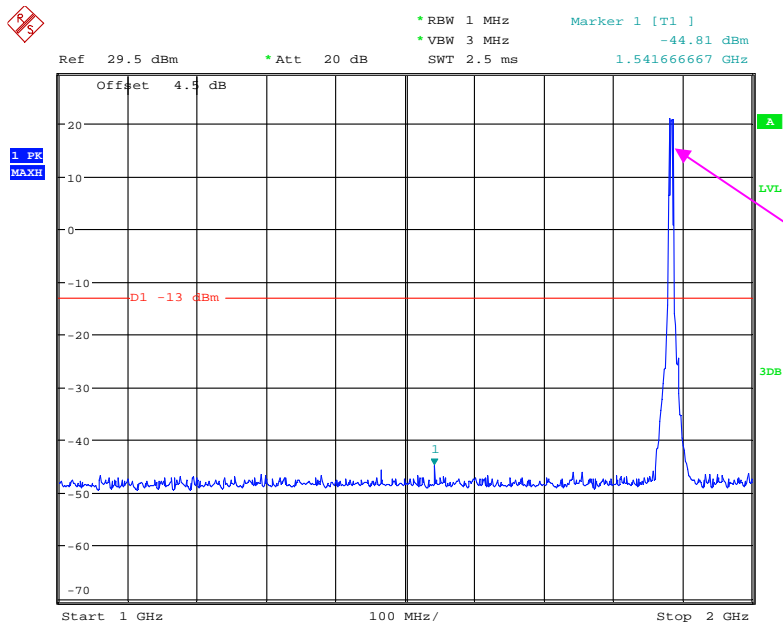
Date: 10.JAN.2018 11:46:44

### 30 MHz - 1 GHz (10.0 MHz, Middle Channel)



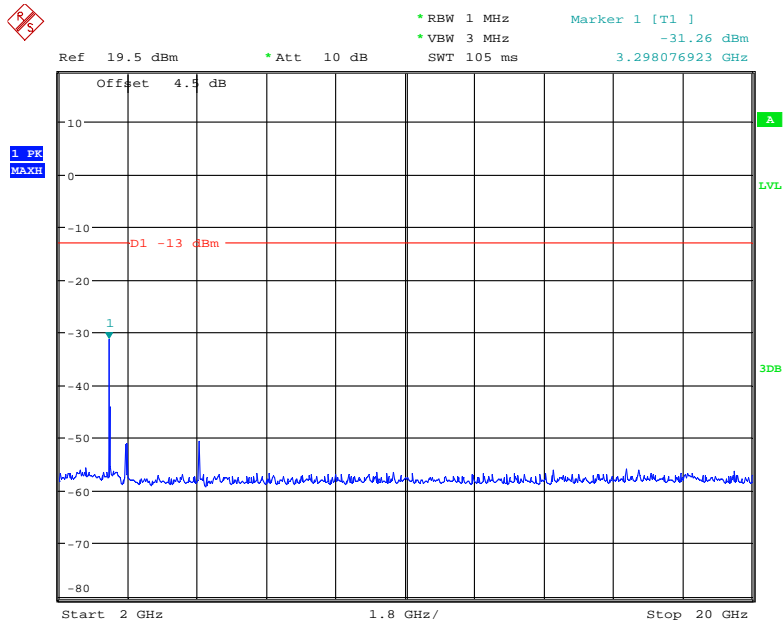
Date: 10.JAN.2018 11:38:09

### 1 GHz - 2GHz (10.0 MHz, Middle Channel)



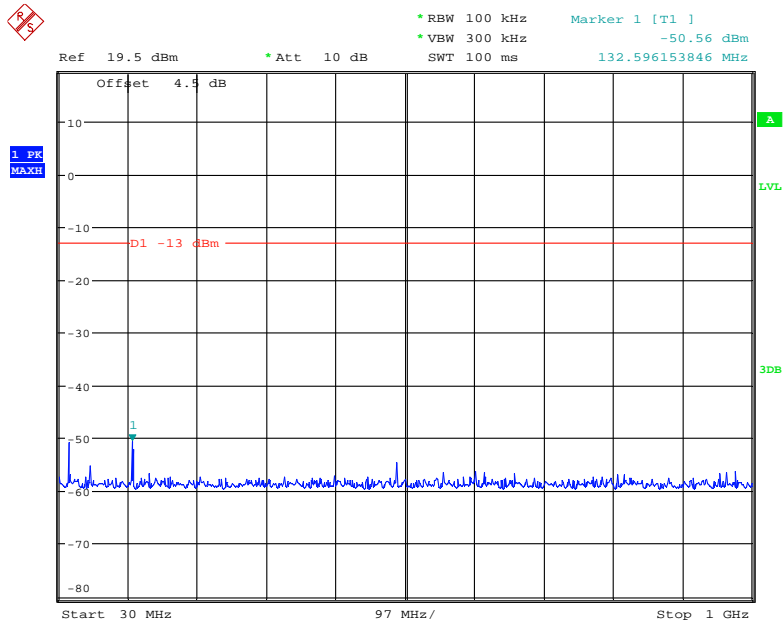
Date: 10.JAN.2018 13:18:07

### 2 GHz – 20 GHz (10.0 MHz, Middle Channel)



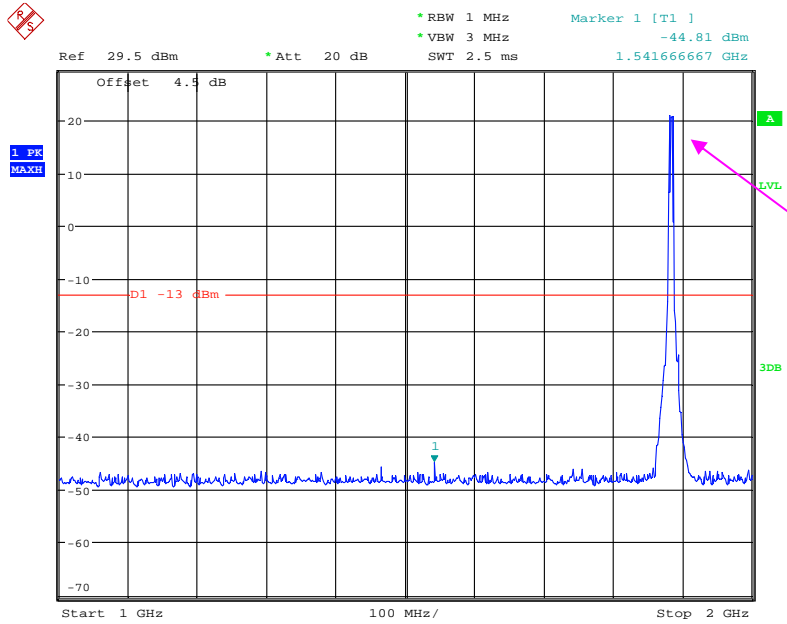
Date: 10.JAN.2018 11:46:23

### 30 MHz - 1 GHz (15.0 MHz, Middle Channel)



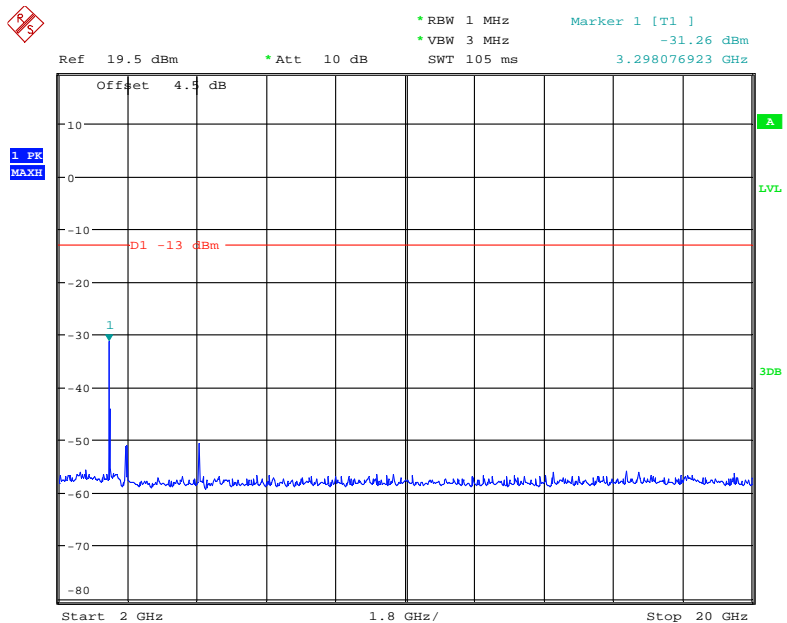
Date: 10.JAN.2018 11:38:09

### 1 GHz – 2GHz (15.0 MHz, Middle Channel)



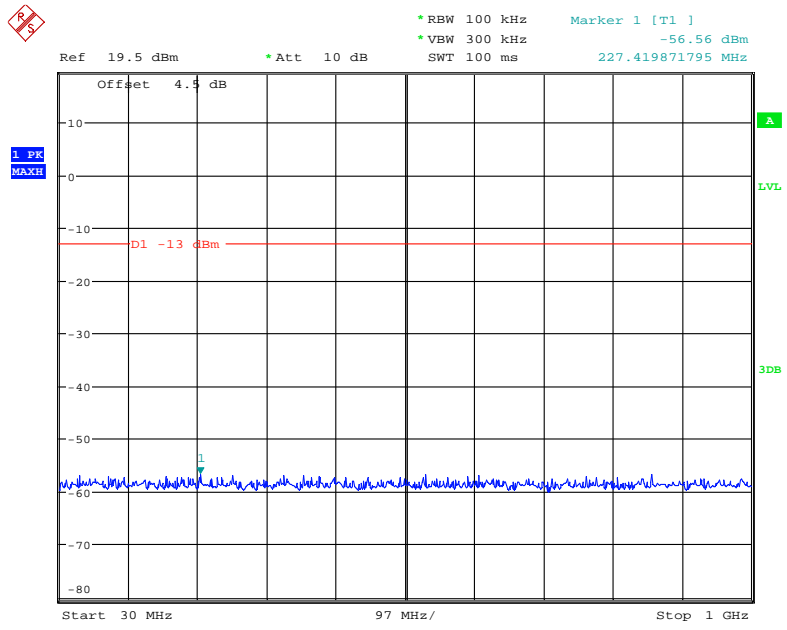
Date: 10.JAN.2018 13:18:07

### 2 GHz – 20 GHz (15.0 MHz, Middle Channel)



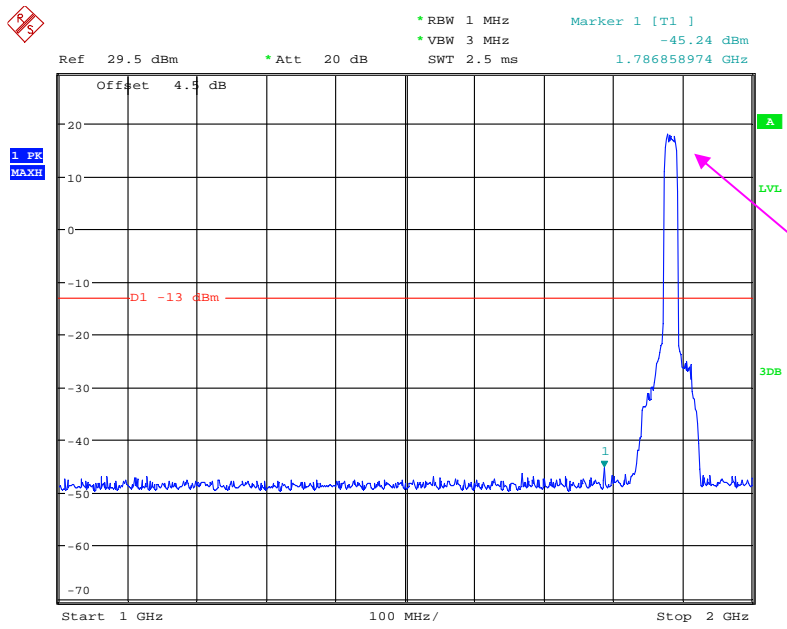
Date: 10.JAN.2018 11:46:23

### 30 MHz - 1 GHz (20.0 MHz, Middle Channel)



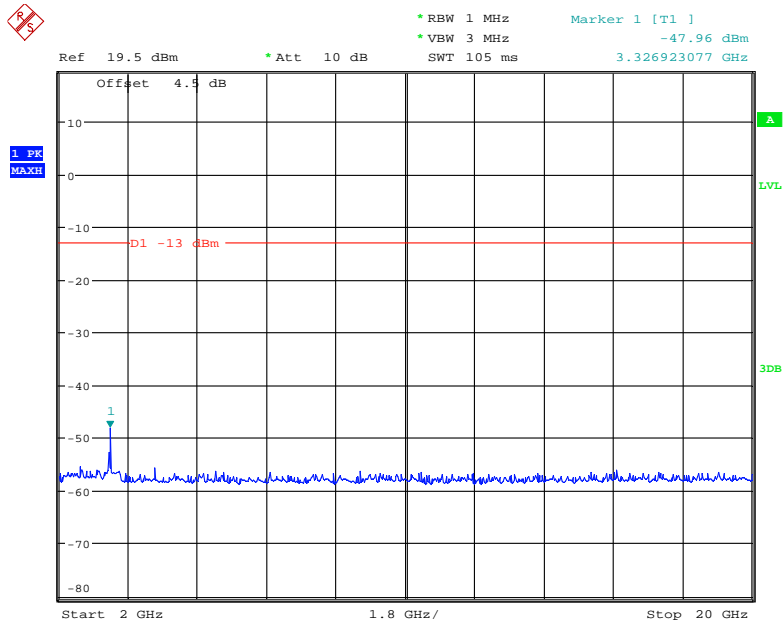
Date: 10.JAN.2018 11:40:47

### 1 GHz - 2GHz (20.0 MHz, Middle Channel)



Date: 10.JAN.2018 13:19:22

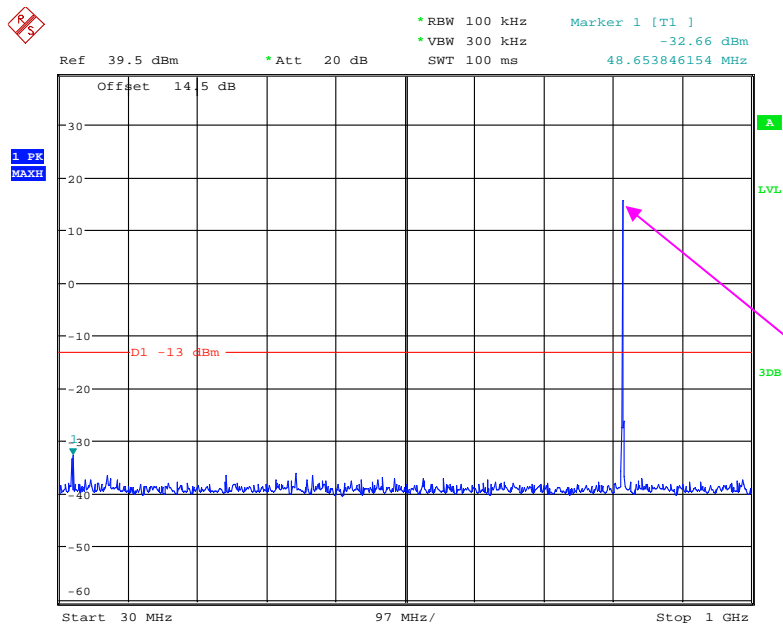
### 2 GHz – 20 GHz (20.0 MHz, Middle Channel)



Date: 10.JAN.2018 11:45:40

### LTE Band 26:

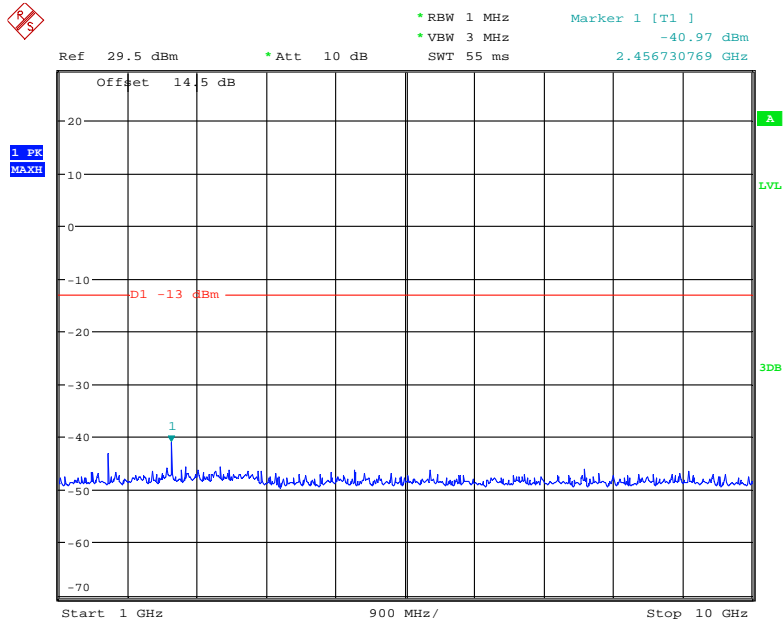
### 30 MHz - 1 GHz (1.4 MHz, Middle Channel)



Date: 8.JAN.2018 12:47:07

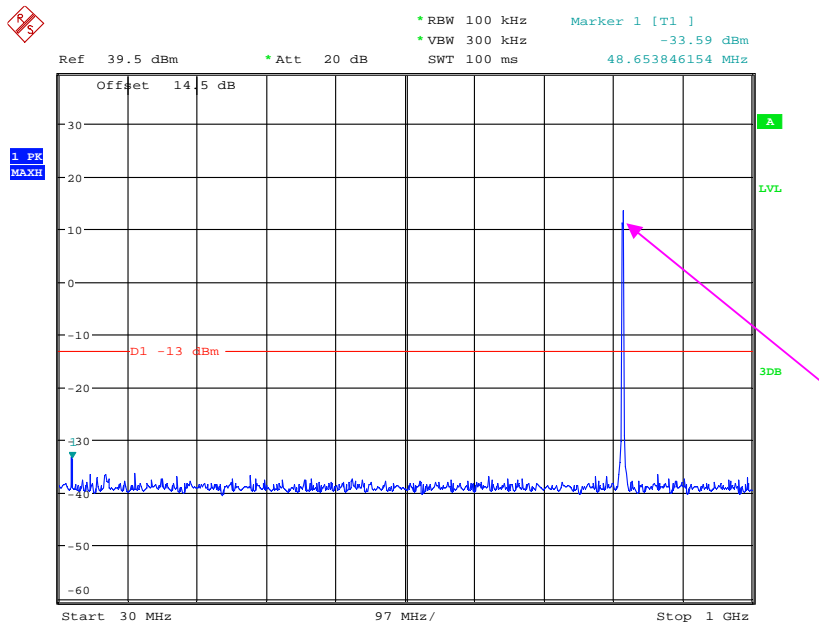


### 1 GHz – 10GHz (1.4 MHz, Middle Channel)



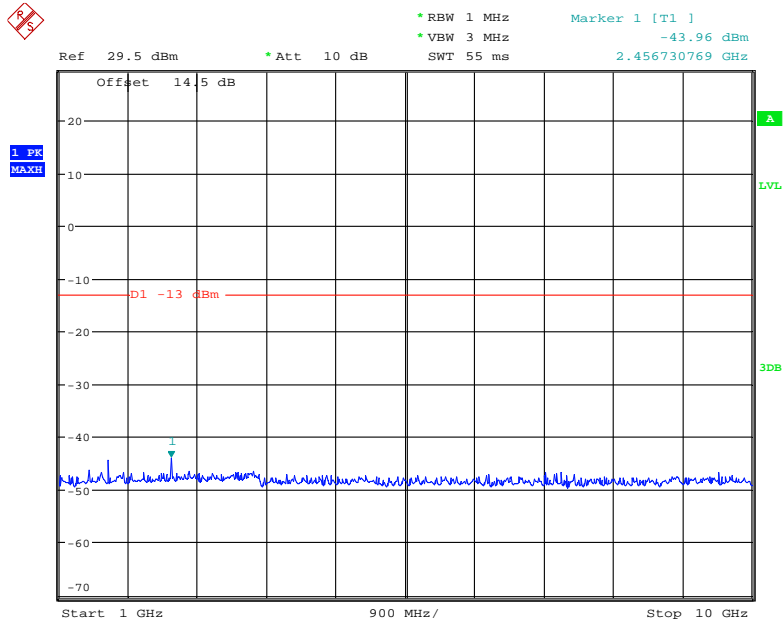
Date: 8.JAN.2018 12:47:58

### 30 MHz - 1 GHz (3.0 MHz, Middle Channel)



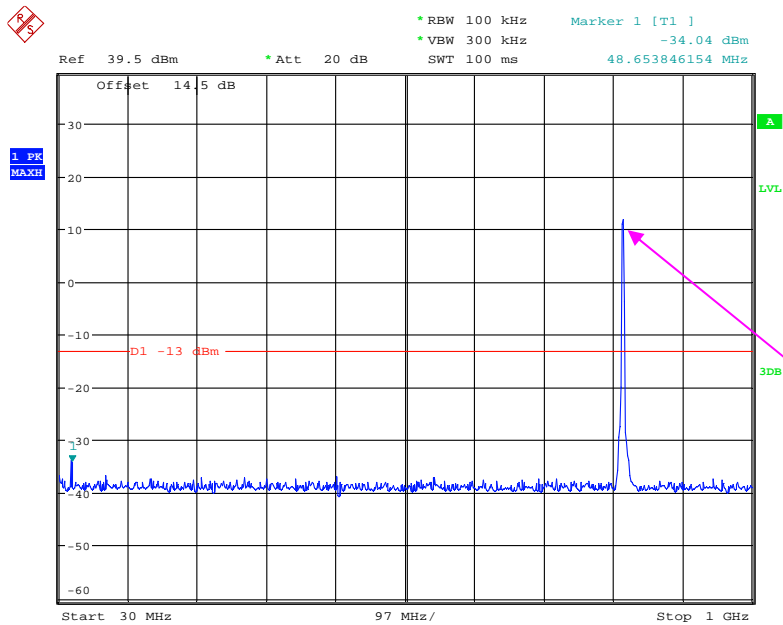
Date: 8.JAN.2018 12:46:42

### 1 GHz – 10GHz (3.0 MHz, Middle Channel)



Date: 8.JAN.2018 12:48:20

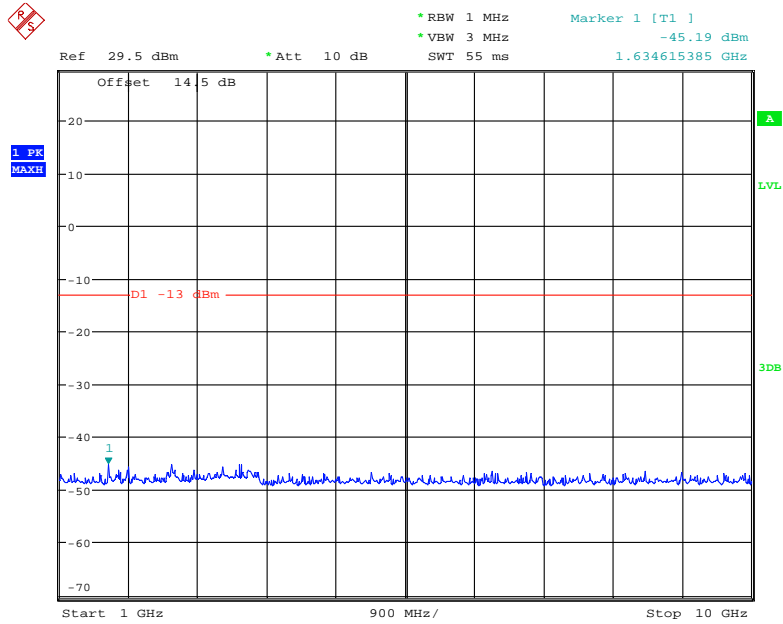
### 30 MHz - 1 GHz (5.0 MHz, Middle Channel)



Fundamental test

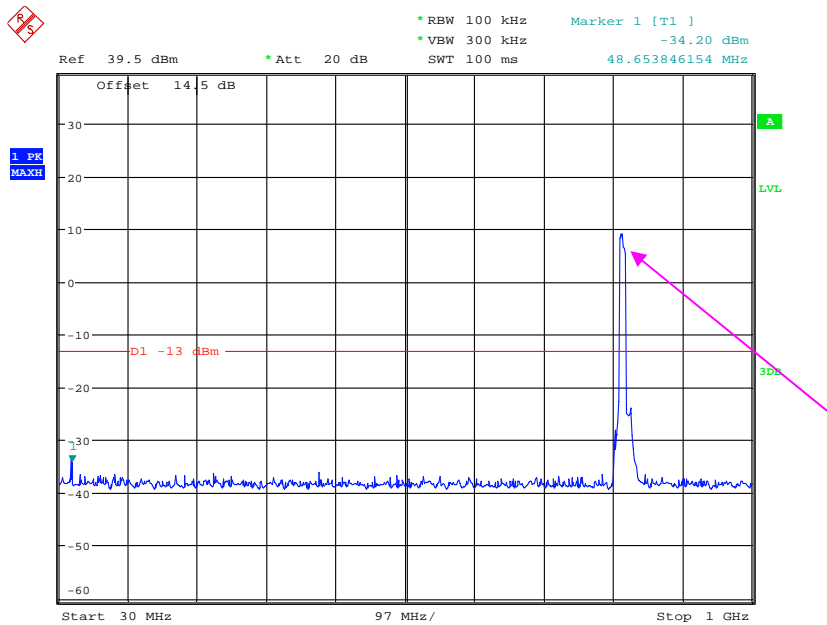
Date: 8.JAN.2018 12:46:16

**1 GHz – 10GHz (5.0 MHz, Middle Channel)**



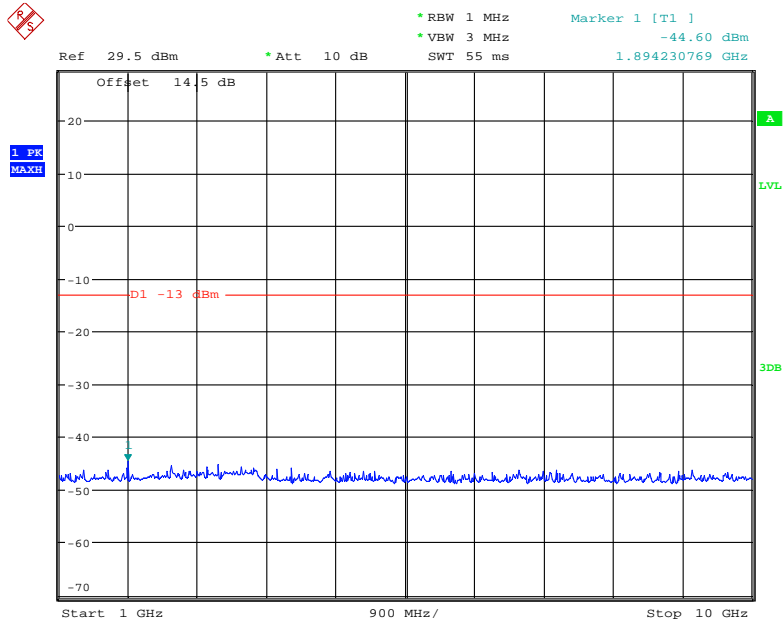
Date: 8.JAN.2018 12:48:43

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



Date: 8.JAN.2018 12:45:12

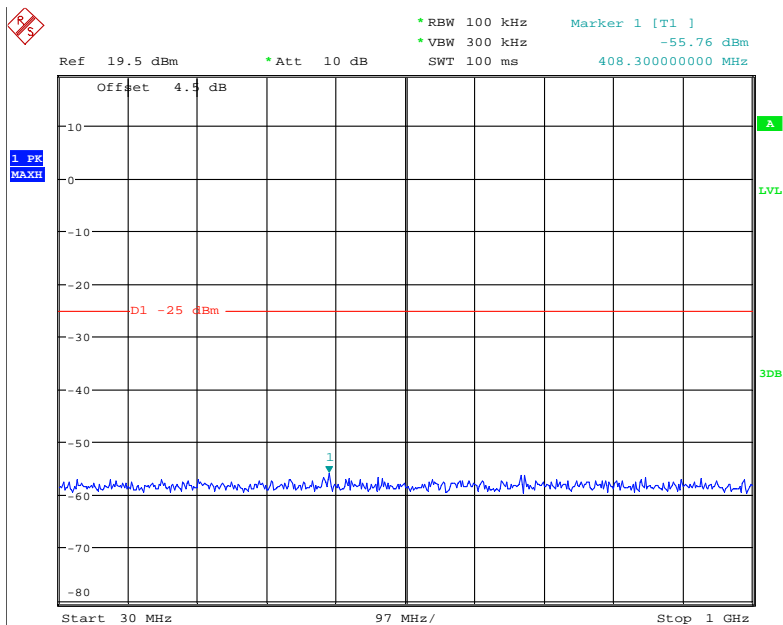
### 1 GHz – 10GHz (10.0 MHz, Middle Channel)



Date: 8.JAN.2018 12:49:09

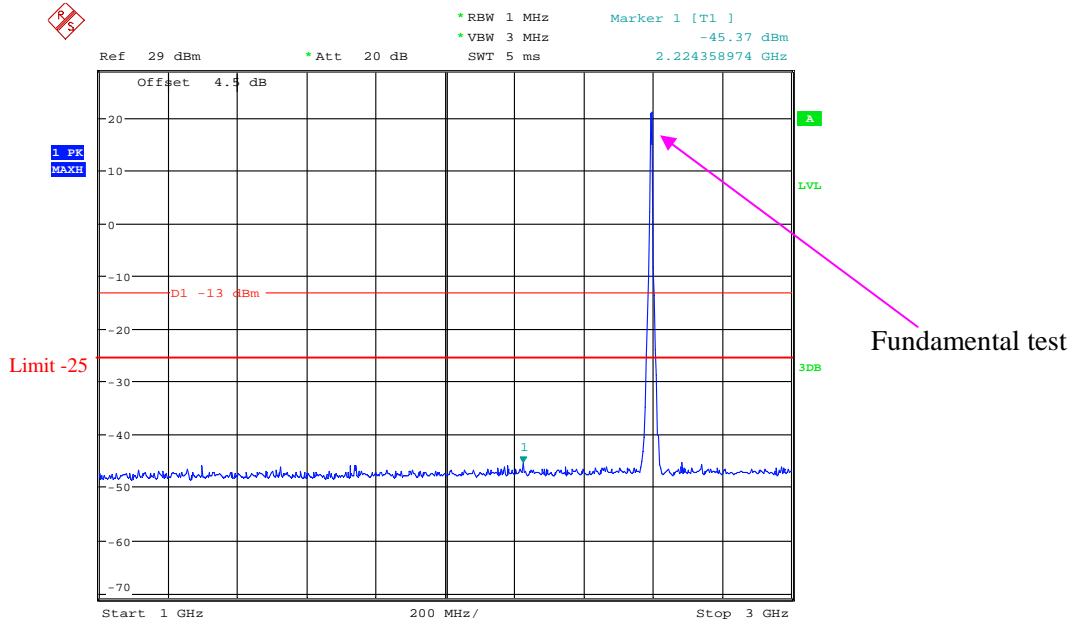
### LTE Band 41:

### 30 MHz – 1 GHz (5.0 MHz, Middle Channel)



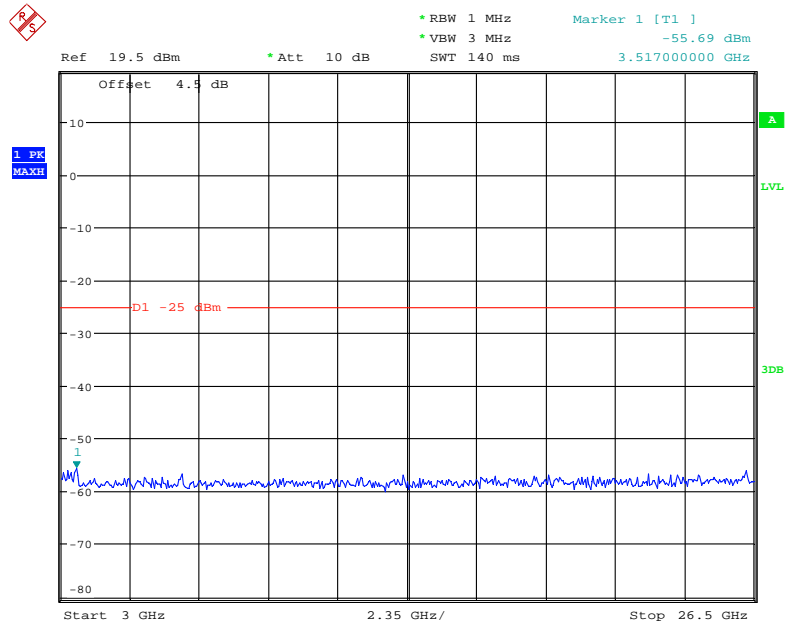
Date: 5.MAR.2018 09:06:05

**1 GHz – 3GHz (5.0 MHz, Middle Channel)**



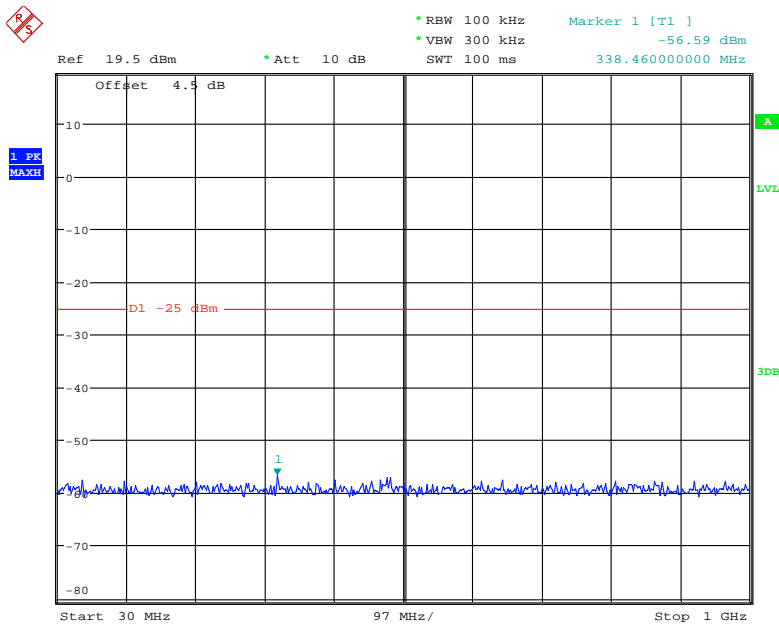
Date: 11.FEB.2018 15:46:01

**3 GHz – 26.5GHz (5.0 MHz, Middle Channel)**



Date: 5.MAR.2018 09:03:35

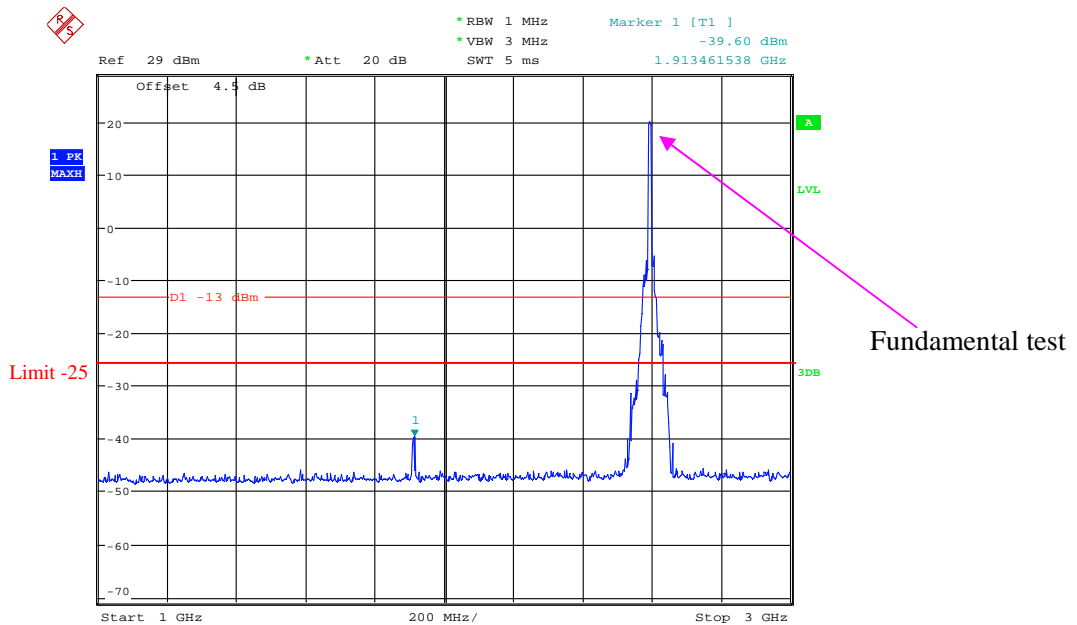
### 30 MHz – 1 GHz (10.0 MHz, Middle Channel)



Date: 5.MAR.2018 09:06:26

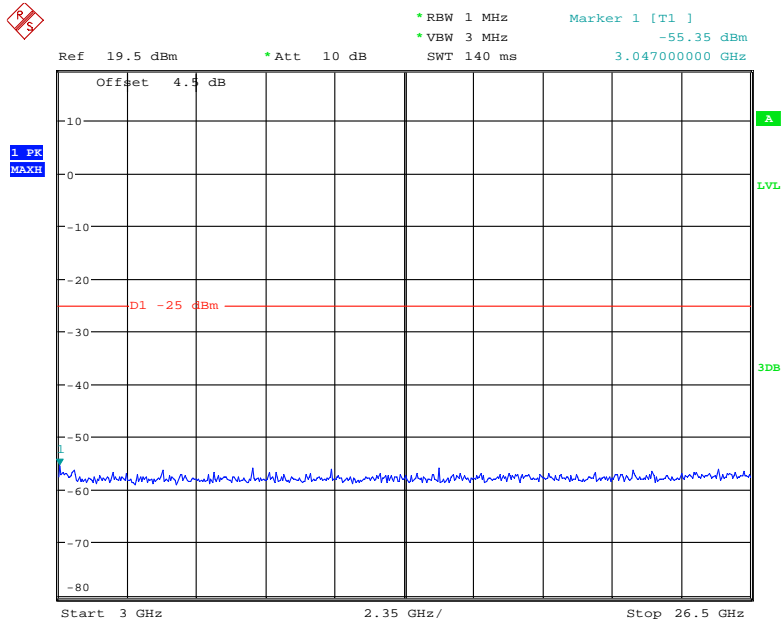
V

### 1 GHz – 3GHz (10.0 MHz, Middle Channel)



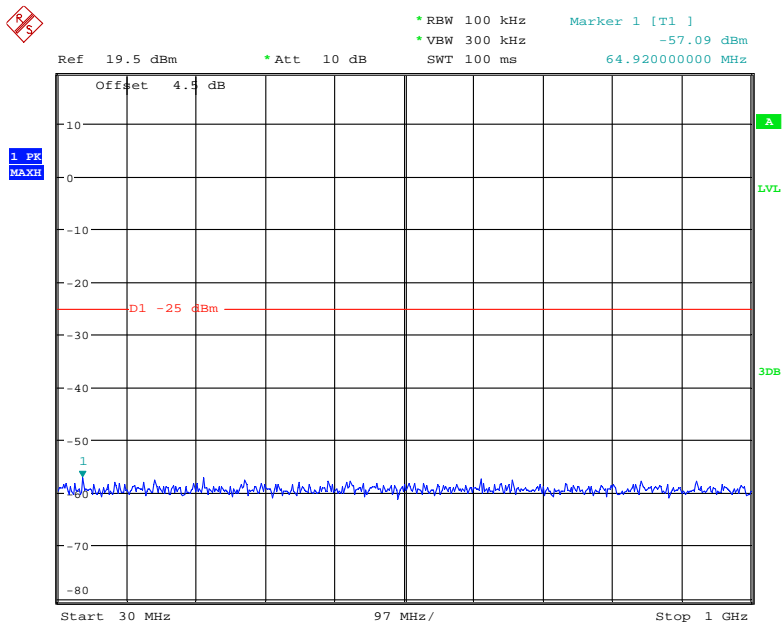
Date: 11.FEB.2018 15:50:28

### 3 GHz – 26.5GHz (10.0 MHz, Middle Channel)



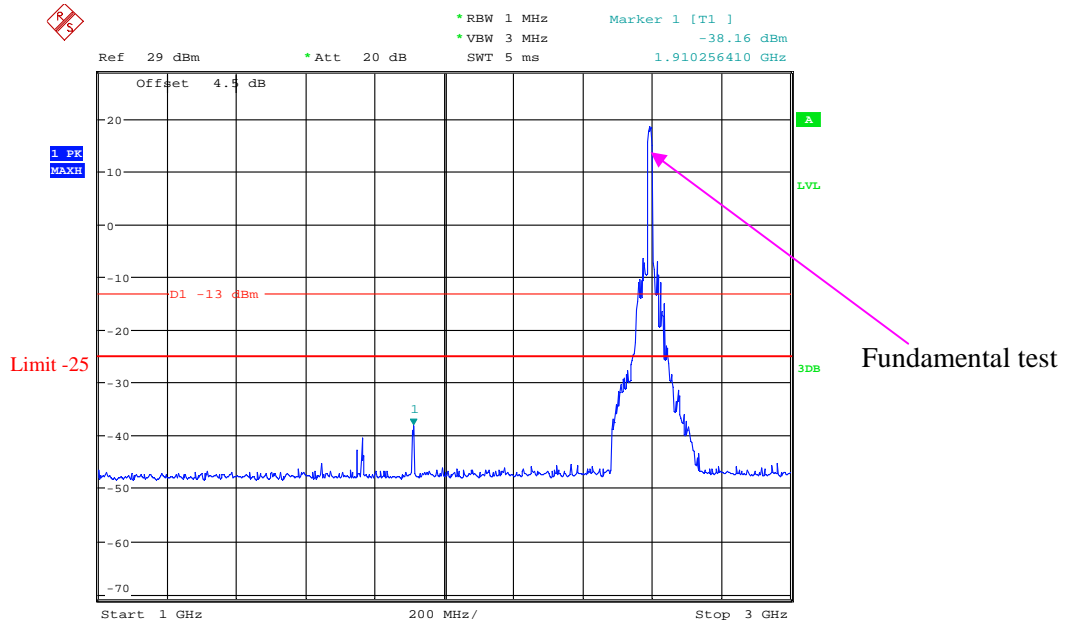
Date: 5.MAR.2018 09:04:06

### 30 MHz – 1 GHz (15.0 MHz, Middle Channel)



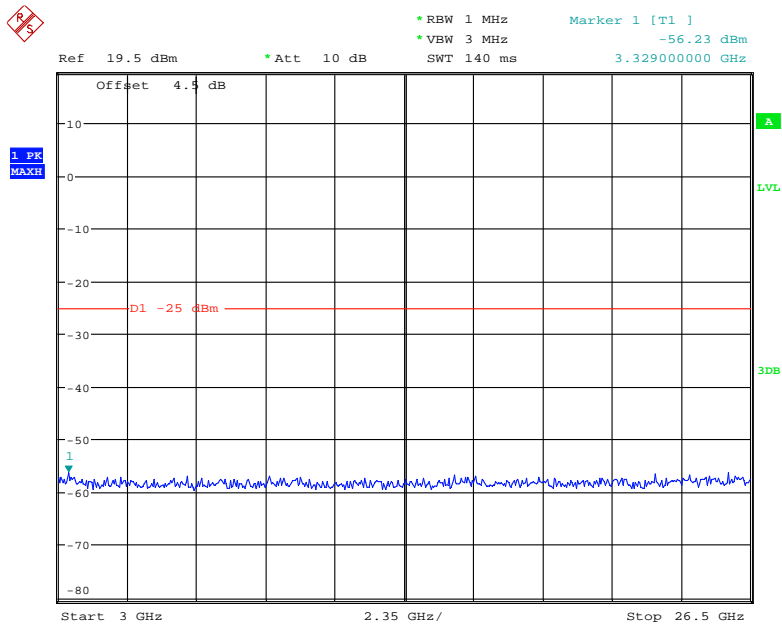
Date: 5.MAR.2018 09:06:38

### 1 GHz – 3GHz (15.0 MHz, Middle Channel)



Date: 11.FEB.2018 15:52:44

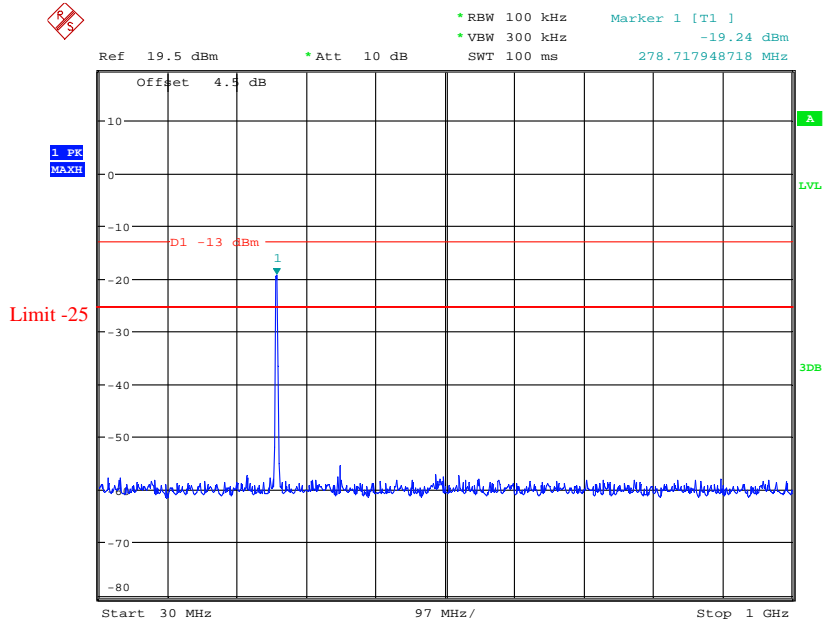
### 3 GHz – 26.5GHz (15.0 MHz, Middle Channel)



Date: 5.MAR.2018 09:04:36

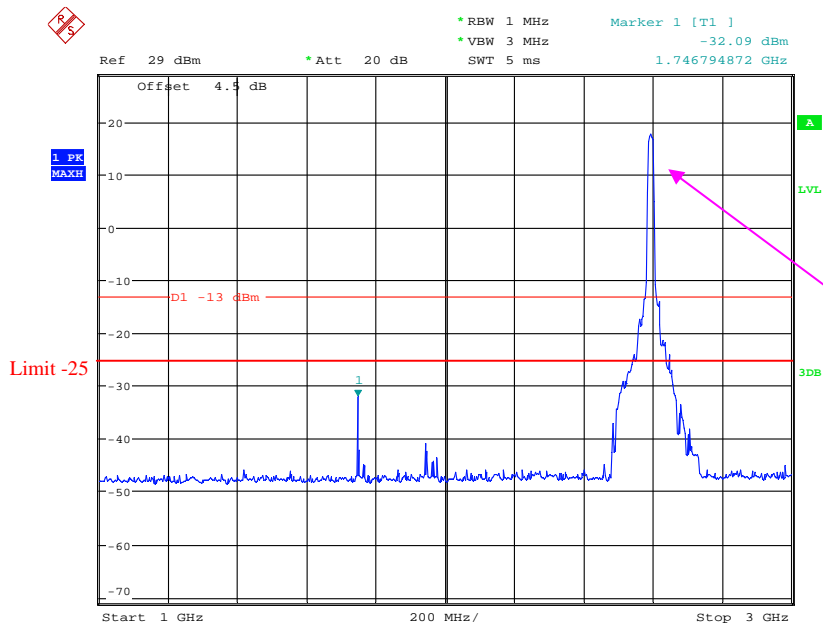


### 30 MHz – 1 GHz (20.0 MHz, Middle Channel)



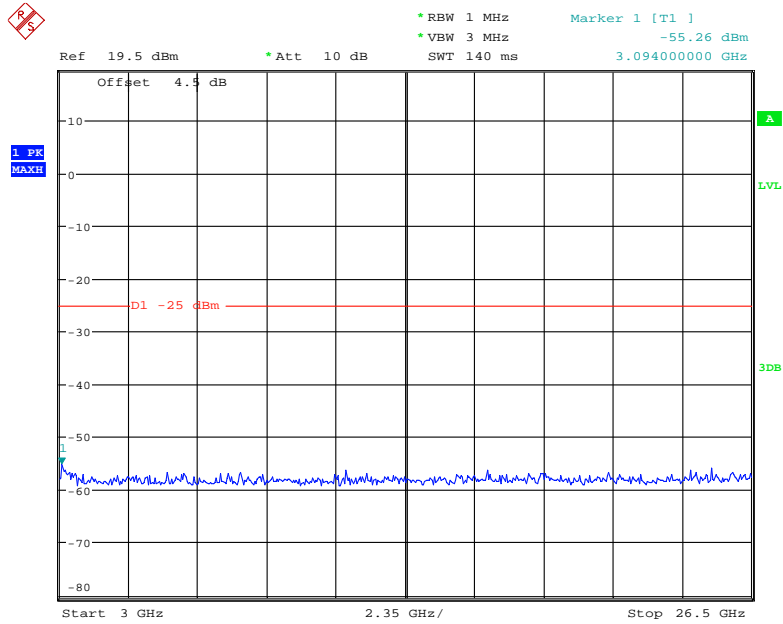
Date: 11.FEB.2018 15:38:25

### 1 GHz – 3GHz (20.0 MHz, Middle Channel)



Date: 11.FEB.2018 15:55:19

### 3 GHz – 26.5GHz (20.0 MHz, Middle Channel)

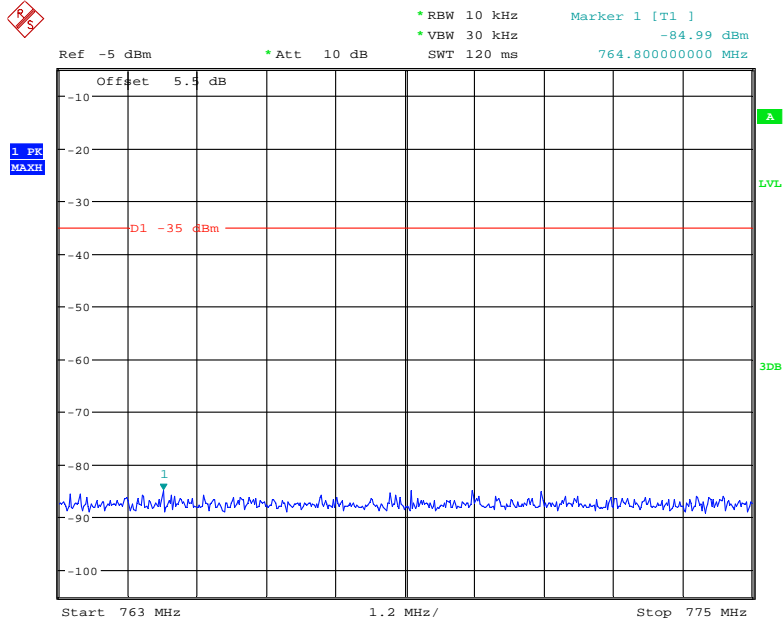


Date: 5.MAR.2018 09:05:23

**Additional Conducted Spurious Emissions Evaluations in accordance with FCC §27.53 (c)**

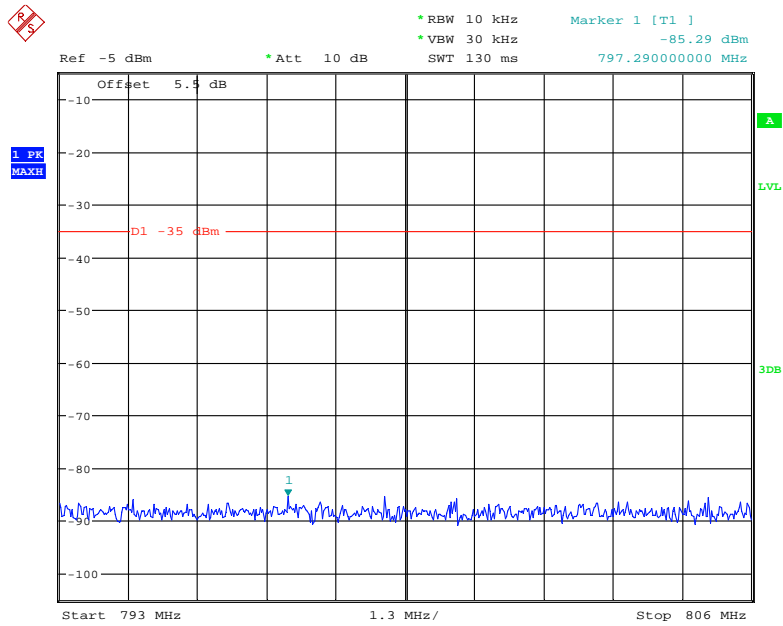
Note: because of RBW 10kHz convert to 6.25kHz,  $10\lg(10/6.25)=2$ , offset added with more 2dB.

**763 MHz – 775 MHz, 5MHz**



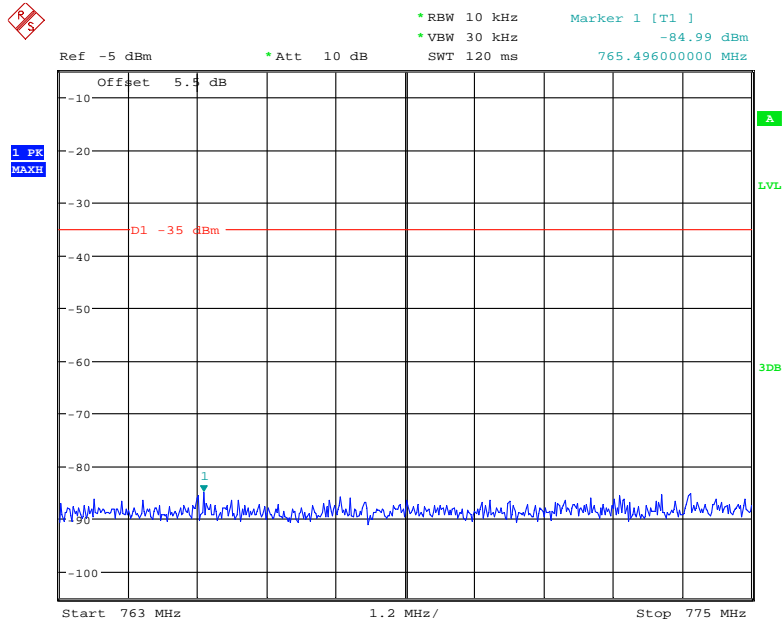
Date: 29.MAR.2018 16:11:36

**793 MHz – 806 MHz, 5MHz**



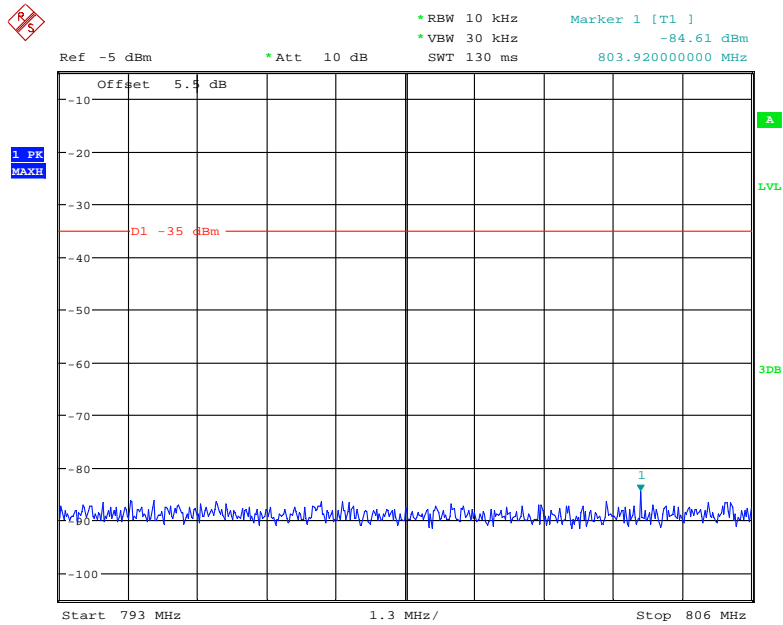
Date: 29.MAR.2018 16:14:42

### 763 MHz – 775 MHz, 10MHz



Date: 29.MAR.2018 16:12:07

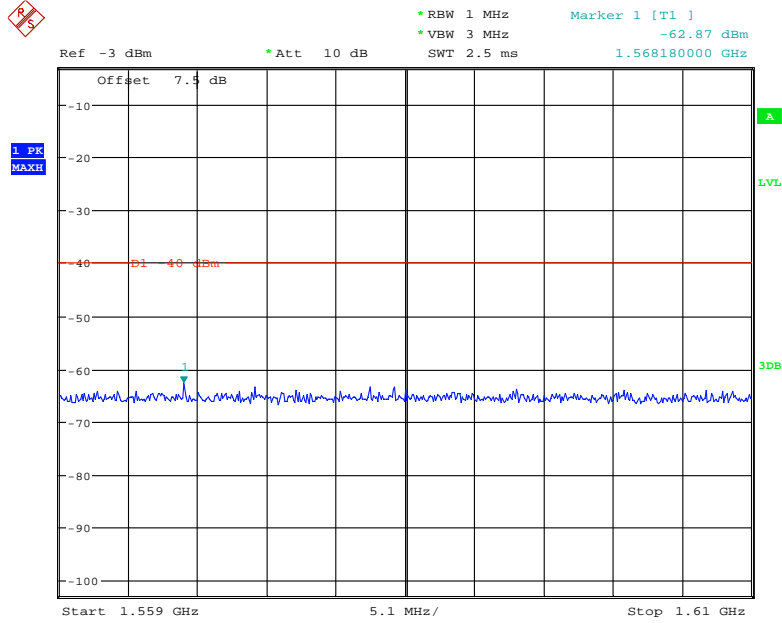
### 793 MHz – 806 MHz, 10MHz



Date: 29.MAR.2018 16:14:08

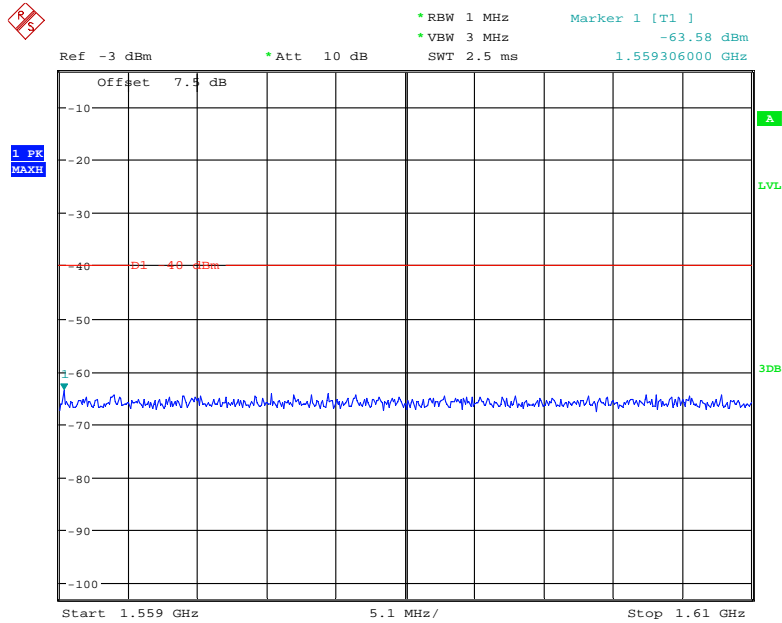
Additional Conducted Spurious Emissions Evaluations in accordance with FCC §27.53 (f)

1559 MHz – 1610 MHz, 5MHz



Date: 29.MAR.2018 16:08:27

1559 MHz – 1610 MHz, 10MHz



Date: 29.MAR.2018 16:09:02

## FCC § 2.1053; § 22.917 (a); § 24.238 (a); § 27.53(c)(g)(h)(m) ; § 90.691 SPURIOUS RADIATED EMISSIONS

### Applicable Standard

FCC § 2.1053, § 22.917(a) and § 24.238(a) and § 27.53(c) (g) (h) (m) and § 90.691.

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

### Test Procedure

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

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

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

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

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

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

Spurious attenuation limit in dB =  $55 + 10 \text{Log}_{10} (\text{power out in Watts})$

### Test Data

#### Environmental Conditions

<b>Temperature:</b>	22~24 °C
<b>Relative Humidity:</b>	52~54 %
<b>ATM Pressure:</b>	100.5~101.0 kPa

*The testing was performed by Simon Wang on 2018-.01-26 and 2018-04-18.*

*EUT operation mode: Transmitting*

Pre-scan with Low, Middle and High channel, the worst case as below:

**30 MHz ~ 10 GHz:**

**Cellular Band (Part 22H)**

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)			
GSM Mode, Middle channel										
938.2	33.64	109	1.9	H	-63.4	0.70	0	-64.10	-13	51.10
938.2	33.47	78	1.1	V	-63.5	0.70	0	-64.20	-13	51.20
1673.20	44.06	121	2.4	H	-63.0	1.30	9.10	-55.20	-13	42.20
1673.20	47.94	79	2.3	V	-58.5	1.30	9.10	-50.70	-13	37.70
2509.80	44.16	320	1.7	H	-59.4	2.60	9.30	-52.70	-13	39.70
2509.80	46.97	207	2.4	V	-55.9	2.60	9.30	-49.20	-13	36.20
3346.40	44.24	296	2.1	H	-56.1	1.50	9.60	-48.00	-13	35.00
3346.40	44.92	334	1.5	V	-55.5	1.50	9.60	-47.40	-13	34.40
WCDMA Mode, Middle channel										
945.1	34.12	256	2.3	H	-62.9	0.70	0	-63.60	-13	50.60
945.1	34.57	29	2.0	V	-62.4	0.70	0	-63.10	-13	50.10
1673.20	41.49	110	1.6	H	-65.6	1.30	9.10	-57.80	-13	44.80
1673.20	42.36	227	1.3	V	-64.1	1.30	9.10	-56.30	-13	43.30
2509.80	45.85	358	1.0	H	-57.7	2.60	9.30	-51.00	-13	38.00
2509.80	46.74	291	1.6	V	-56.2	2.60	9.30	-49.50	-13	36.50
3346.40	41.07	250	2.3	H	-59.3	1.50	9.60	-51.20	-13	38.20
3346.40	43.58	211	1.2	V	-56.8	1.50	9.60	-48.70	-13	35.70
CDMA (1*RTT , BC0), Middle channel										
960.3	32.62	248	2.3	H	-64.4	0.74	0	-65.14	-13	52.14
960.3	32.15	228	1.1	V	-64.8	0.74	0	-65.54	-13	52.54
1673.04	52.45	160	2.4	H	-55.0	1.30	9.10	-47.20	-13	34.20
1673.04	52.78	4	2.5	V	-54.1	1.30	9.10	-46.30	-13	33.30
2509.56	50.42	15	1.3	H	-53.8	2.60	9.30	-47.10	-13	34.10
2509.56	50.21	331	2.4	V	-53.4	2.60	9.30	-46.70	-13	33.70
CDMA(EV-DO, BC0), Middle channel										
960.3	32.54	356	1.5	H	-64.5	0.74	0	-65.24	-13	52.24
960.3	32.32	35	1.0	V	-64.7	0.74	0	-65.44	-13	52.44
1673.04	52.63	230	1.6	H	-54.8	1.30	9.10	-47.00	-13	34.00
1673.04	52.97	175	1.8	V	-53.9	1.30	9.10	-46.10	-13	33.10
2509.56	50.54	49	1.1	H	-53.7	2.60	9.30	-47.00	-13	34.00
2509.56	50.38	130	1.8	V	-53.2	2.60	9.30	-46.50	-13	33.50

**Part 90S**

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)			
CDMA (1*RTT , BC10), Middle channel										
970.8	32.86	265	1.8	H	-64.1	0.74	0	-64.84	-13	51.84
970.8	32.71	251	1.9	V	-64.3	0.74	0	-65.04	-13	52.04
1641.00	52.24	75	1.1	H	-56.1	1.40	8.90	-48.60	-13	35.60
1641.00	52.37	285	2.1	V	-55.7	1.40	8.90	-48.20	-13	35.20
2461.50	50.64	31	1.3	H	-53.6	2.60	9.30	-46.90	-13	33.90
2461.50	50.29	298	2.5	V	-53.3	2.60	9.30	-46.60	-13	33.60
CDMA(EV-DO, BC10), Middle channel										
970.8	32.45	148	1.6	H	-64.5	0.74	0	-65.24	-13	52.24
970.8	32.24	358	1.2	V	-64.8	0.74	0	-65.54	-13	52.54
1641.00	52.45	332	1.4	H	-55.9	1.40	8.90	-48.40	-13	35.40
1641.00	52.36	33	1.9	V	-55.7	1.40	8.90	-48.20	-13	35.20
2461.50	50.63	354	1.4	H	-53.6	2.60	9.30	-46.90	-13	33.90
2461.50	50.17	99	2.1	V	-53.4	2.60	9.30	-46.70	-13	33.70



**30 MHz ~ 20 GHz:**

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 24E/27	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
<b>GSM Mode, Middle channel</b>										
938.2	33.24	96	2.1	H	-63.8	0.70	0	-64.50	-13	51.50
938.2	33.38	101	2.1	V	-63.6	0.70	0	-64.30	-13	51.30
3760.00	43.39	290	2.0	H	-57.8	1.50	9.70	-49.60	-13	36.60
3760.00	45.17	10	1.1	V	-55.6	1.50	9.70	-47.40	-13	34.40
<b>WCDMA Mode Band II, Middle channel</b>										
945.1	34.85	117	1.6	H	-62.1	0.70	0	-62.80	-13	49.80
945.1	33.78	122	1.9	V	-63.2	0.70	0	-63.90	-13	50.90
3760.00	44.35	5	1.7	H	-56.9	1.50	9.70	-48.70	-13	35.70
3760.00	42.57	19	2.1	V	-58.2	1.50	9.70	-50.00	-13	37.00
5640.00	56.52	56	1.5	H	-41.1	1.70	11.20	-31.60	-13	18.60
5640.00	54.82	179	2.4	V	-42.4	1.70	11.20	-32.90	-13	19.90
<b>CDMA (1*RTT , BC1), Middle channel</b>										
949	32.49	99	1.1	H	-64.5	0.70	0	-65.20	-13	52.20
949	32.56	122	1.6	V	-64.4	0.70	0	-65.10	-13	52.10
3760.00	53.14	35	2.0	H	-49.1	1.50	9.70	-40.90	-13	27.90
3760.00	54.21	151	1.3	V	-47.6	1.50	9.70	-39.40	-13	26.40
5640.00	51.63	33	1.4	H	-46.7	1.70	11.20	-37.20	-13	24.20
5640.00	50.45	202	1.6	V	-47.5	1.70	11.20	-38.00	-13	25.00
<b>CDMA(EV-DO, BC1), Middle channel</b>										
949	32.63	177	2.4	H	-64.4	0.70	0	-65.10	-13	52.10
949	32.29	278	1.9	V	-64.7	0.70	0	-65.40	-13	52.40
3760.00	54.51	57	1.8	H	-47.8	1.50	9.70	-39.60	-13	26.60
3760.00	53.65	94	1.4	V	-48.2	1.50	9.70	-40.00	-13	27.00
5640.00	52.18	130	2.0	H	-46.1	1.70	11.20	-36.60	-13	23.60
5640.00	51.82	360	2.0	V	-46.2	1.70	11.20	-36.70	-13	23.70
<b>WCDMA Mode Band IV, Middle channel</b>										
945.1	34.14	291	2.3	H	-62.9	0.70	0	-63.60	-13	50.60
945.1	33.98	182	1.0	V	-63.0	0.70	0	-63.70	-13	50.70
3465.20	43.58	182	1.2	H	-56.8	1.50	9.70	-48.60	-13	35.60
3465.20	44.12	80	2.3	V	-57.0	1.50	9.70	-48.80	-13	35.80
5197.80	51.45	304	1.5	H	-47.2	1.60	11.20	-37.60	-13	24.60
5197.80	48.44	277	2.0	V	-49.7	1.60	11.20	-40.10	-13	27.10

**LTE Band:**

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

Frequency (MHz)	Receiver	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
	Reading (dBμV)		Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)			
<b>Band 2</b>										
<b>Test frequency range:30 MHz ~ 20 GHz</b>										
962.1	32.35	226	1.2	H	-64.6	0.74	0	-65.34	-13	52.34
962.1	33.12	170	1.6	V	-63.9	0.74	0	-64.64	-13	51.64
3760.00	43.39	153	1.4	H	-57.8	1.50	9.70	-49.60	-13	36.60
3760.00	44.21	303	2.5	V	-56.5	1.50	9.70	-48.30	-13	35.30
5640.00	49.35	69	2.1	H	-48.2	1.70	11.20	-38.70	-13	25.70
5640.00	52.71	217	1.9	V	-44.5	1.70	11.20	-35.00	-13	22.00
<b>Band 4</b>										
<b>Test frequency range:30 MHz ~ 20 GHz</b>										
962.1	32.78	305	1.1	H	-64.2	0.74	0	-64.94	-13	51.94
962.1	33.61	35	1.4	V	-63.4	0.74	0	-64.14	-13	51.14
3465.00	41.44	277	1.5	H	-58.9	1.50	9.70	-50.70	-13	37.70
3465.00	43.01	192	1.2	V	-58.1	1.50	9.70	-49.90	-13	36.90
5197.50	45.77	306	1.5	H	-52.9	1.60	11.20	-43.30	-13	30.30
5197.50	45.31	217	2.0	V	-52.8	1.60	11.20	-43.20	-13	30.20
<b>Band 5</b>										
<b>Test frequency range:30 MHz ~ 9 GHz</b>										
962.1	32.12	326	2.1	H	-64.9	0.74	0	-65.64	-13	52.64
962.1	33.38	91	1.4	V	-63.6	0.74	0	-64.34	-13	51.34
1673.00	41.92	65	1.6	H	-65.2	1.30	9.10	-57.40	-13	44.40
1673.00	42.31	108	2.3	V	-64.2	1.30	9.10	-56.40	-13	43.40
2509.50	44.59	207	2.1	H	-58.9	2.60	9.30	-52.20	-13	39.20
2509.50	45.31	182	2.1	V	-57.6	2.60	9.30	-50.90	-13	37.90
<b>Band 7</b>										
<b>Test frequency range: 30 MHz ~ 26 GHz</b>										
962.1	33.02	30	1.6	H	-64.0	0.74	0	-64.74	-25	39.74
962.1	33.47	155	1.9	V	-63.5	0.74	0	-64.24	-25	39.24
5070.00	46.88	38	2.1	H	-51.0	1.60	11.20	-41.40	-25	16.4
5070.00	44.11	146	2.3	V	-53.8	1.60	11.20	-44.20	-25	19.2
<b>Band 12</b>										
<b>Test frequency range: 30 MHz ~ 8 GHz</b>										
962.1	33.35	276	1.1	H	-63.6	0.74	0	-64.34	-13	51.34
962.1	33.66	42	2.1	V	-63.3	0.74	0	-64.04	-13	51.04
1415.00	45.66	70	2.1	H	-62.2	1.60	8.30	-55.50	-13	42.50
1415.00	45.56	37	1.3	V	-62.5	1.60	8.30	-55.80	-13	42.80

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)			
<b>Band 13</b>										
<b>Test frequency range:30 MHz ~ 8 GHz</b>										
962.1	32.1	294	2.4	H	-64.9	0.74	0	-65.64	-13	52.64
962.1	32.99	34	1.5	V	-64.0	0.74	0	-64.74	-13	51.74
1564.00	42.73	25	1.1	H	-65.3	1.40	8.90	-57.80	-13	44.80
1564.00	43.35	199	1.2	V	-64.5	1.40	8.90	-57.00	-13	44.00
<b>Band 17</b>										
<b>Test frequency range:30 MHz ~ 8GHz</b>										
962.1	33.87	297	2.0	H	-63.1	0.74	0	-63.84	-13	50.84
962.1	33.2	75	1.1	V	-63.8	0.74	0	-64.54	-13	51.54
1420.00	44.68	136	1.3	H	-63.2	1.60	8.30	-56.50	-13	43.50
1420.00	43.05	249	2.4	V	-65.0	1.60	8.30	-58.30	-13	45.30
<b>Band 25</b>										
<b>Test frequency range: 30 MHz ~ 20 GHz</b>										
962.1	33.87	283	2.2	H	-63.1	0.74	0	-63.84	-13	50.84
962.1	33.41	340	1.6	V	-63.6	0.74	0	-64.34	-13	51.34
3765.00	43.42	230	1.2	H	-58.1	1.50	9.70	-49.90	-13	36.90
3765.00	43.76	314	2.3	V	-57.3	1.50	9.70	-49.10	-13	36.10
5647.50	51.19	232	1.8	H	-42.5	1.70	11.20	-33.00	-13	20.00
5647.50	50.51	265	1.7	V	-42.8	1.70	11.20	-33.30	-13	20.30
<b>Band 26</b>										
<b>Test frequency range: 30 MHz ~ 10GHz</b>										
938.7	35.6	359	1.4	H	-61.4	0.70	0	-62.10	-13	49.10
938.7	36.49	359	1.6	V	-60.5	0.70	0	-61.20	-13	48.20
1638	42.96	149	2.0	H	-65.4	1.40	8.70	-58.10	-13	45.10
1638	43.70	204	2.4	V	-64.4	1.40	8.70	-57.10	-13	44.10
<b>Band 41</b>										
<b>Test frequency range:30 MHz ~ 27 GHz</b>										
962.1	33.96	191	2.3	H	-63.0	0.74	0	-63.74	-25	38.74
962.1	33.32	220	1.8	V	-63.7	0.74	0	-64.44	-25	39.44
5186.00	49.67	184	2.0	H	-49.0	1.60	11.20	-39.4	-25	14.40
5186.00	45.72	114	2.3	V	-52.4	1.60	11.20	-42.8	-25	17.80

**Note:**

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

**FCC § 22.917 (a); § 24.238 (a); §27.53 (c)(g)(h)(m) §90.691 - BAND EDGES**

**Applicable Standard**

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

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

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

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

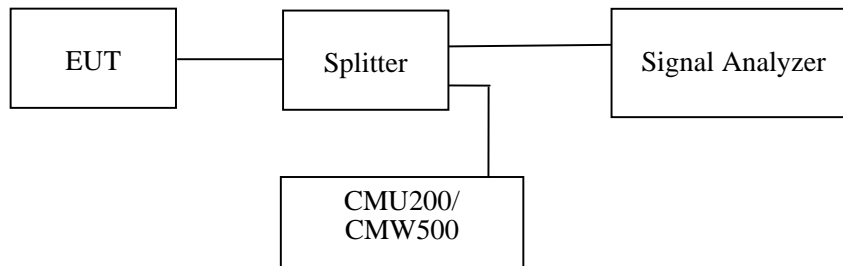
According to FCC §90.691,:

For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz

**Test Procedure**

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

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



**Test Data**

**Environmental Conditions**

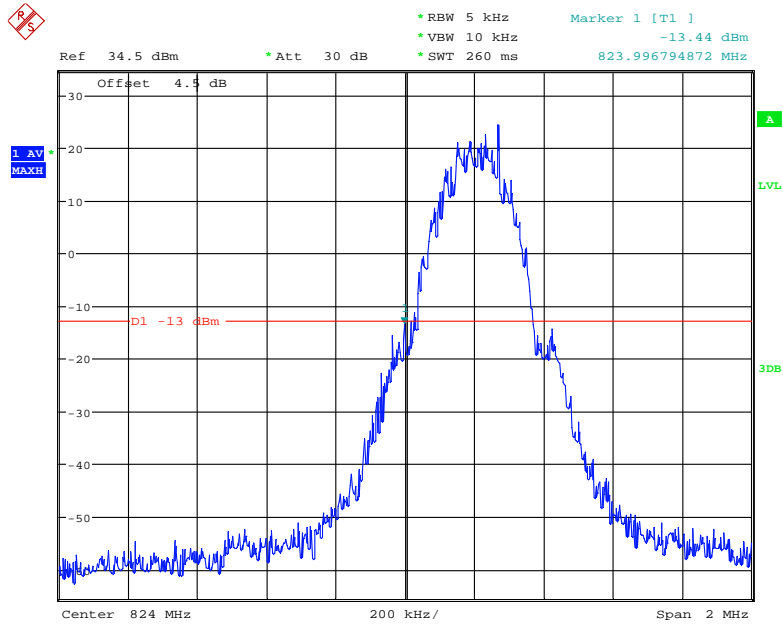
<b>Temperature:</b>	23~25 °C
<b>Relative Humidity:</b>	48~54 %
<b>ATM Pressure:</b>	100.0~101.0 kPa

*The testing was performed by Simon Wang from 2018-01-06 to 2018-04-18.*

*EUT operation mode: Transmitting*

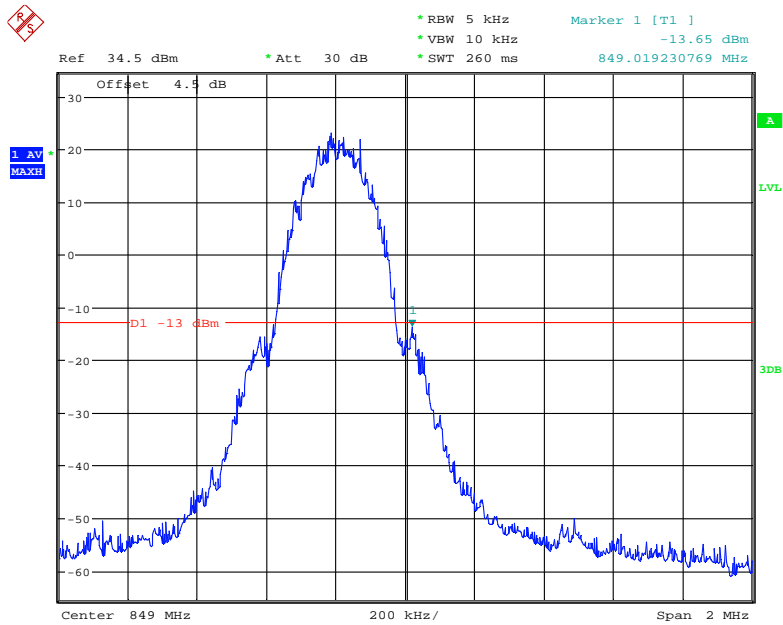
Test Result: Compliance. Please refer to the following plots.

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



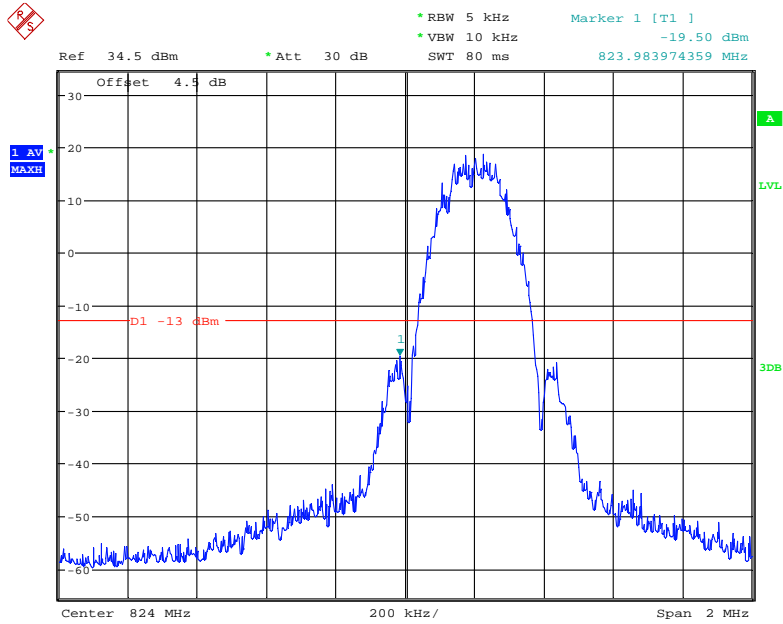
Date: 6.JAN.2018 14:05:14

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



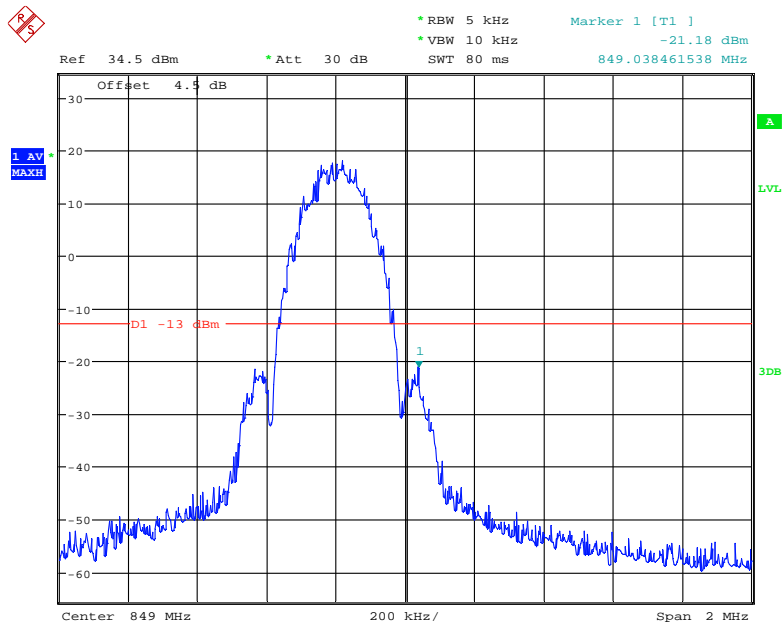
Date: 6.JAN.2018 14:07:14

### Cellular Band, Left Band Edge for EGPRS (8PSK) Mode



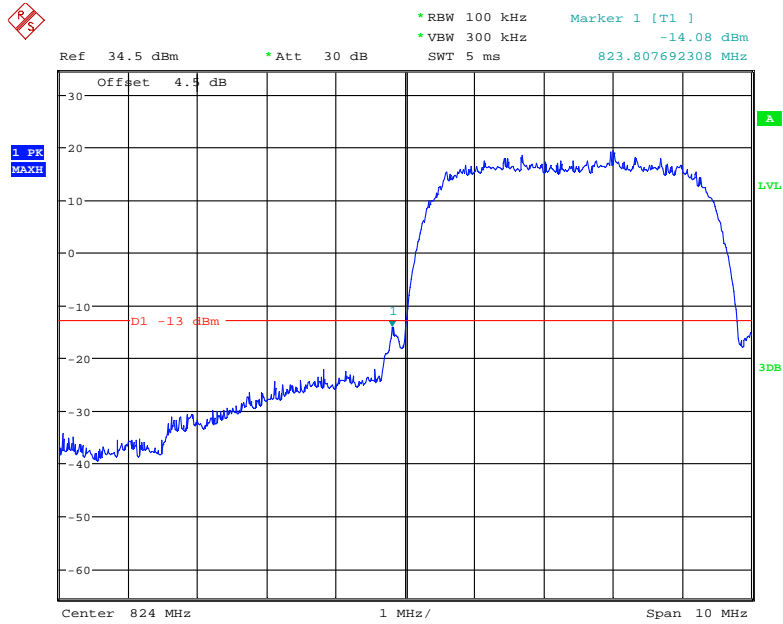
Date: 6.JAN.2018 14:32:10

### Cellular Band, Right Band Edge for EGPRS (8PSK) Mode



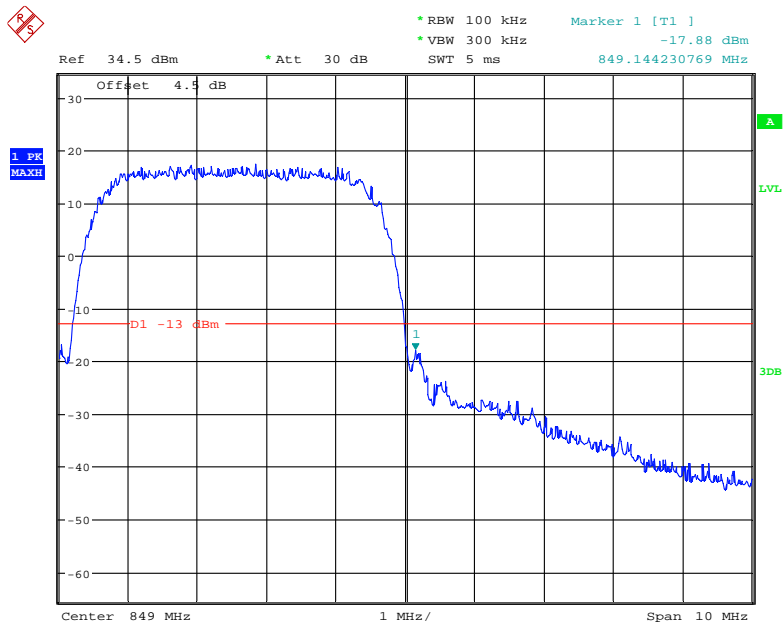
Date: 6.JAN.2018 14:33:00

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



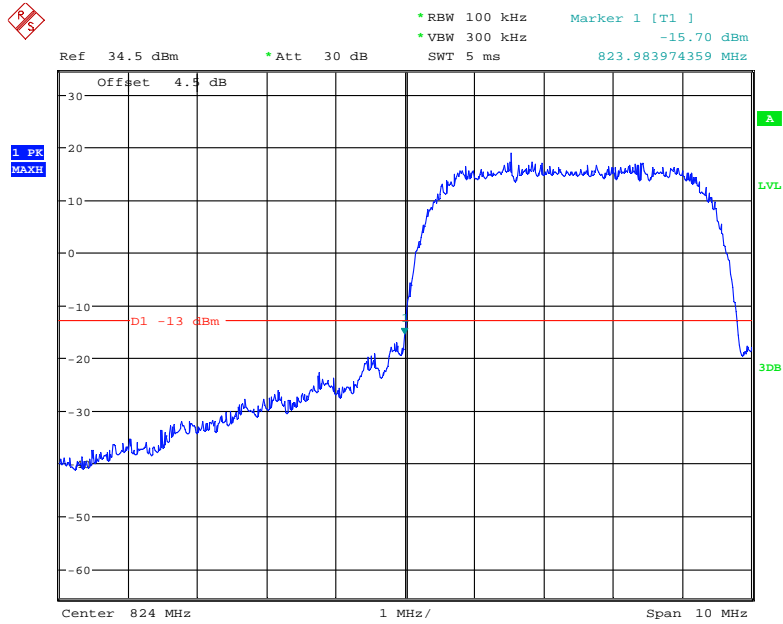
Date: 6.JAN.2018 16:17:09

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



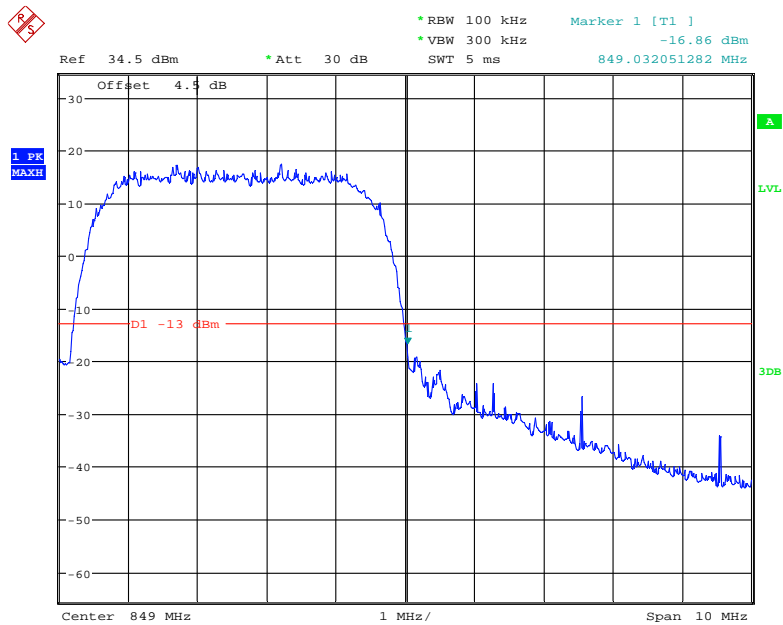
Date: 6.JAN.2018 16:17:35

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



Date: 6.JAN.2018 16:10:10

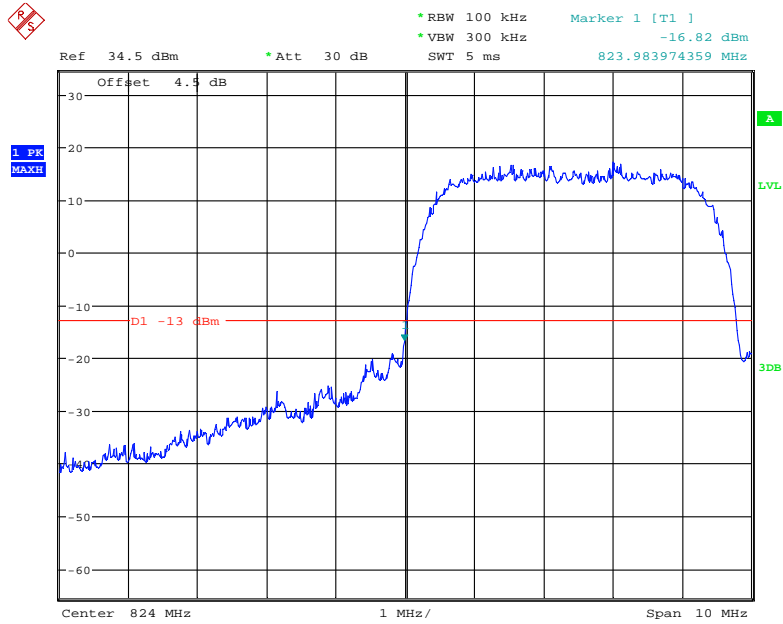
### Cellular Band, Right Band Edge for HSDPA (16QAM) Mode



Date: 6.JAN.2018 16:11:18

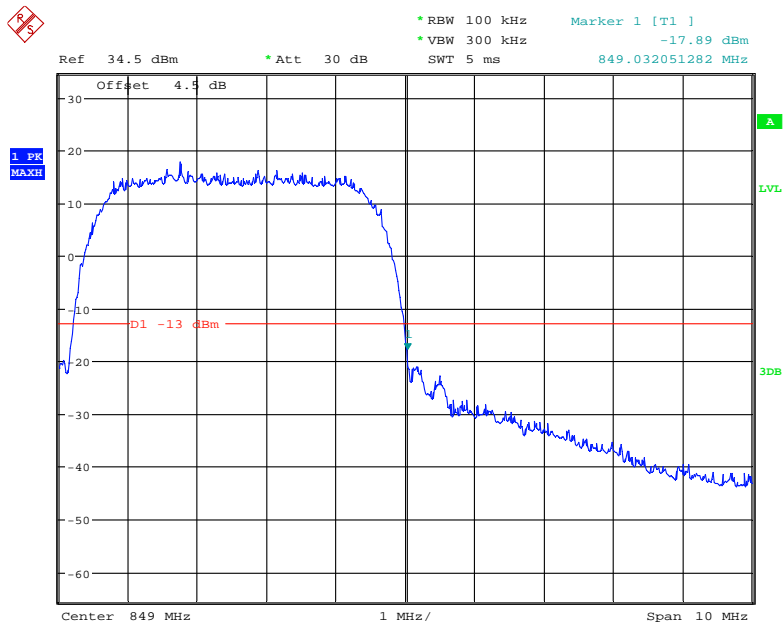


**Cellular Band, Left Band Edge for HSUPA (BPSK) Mode**



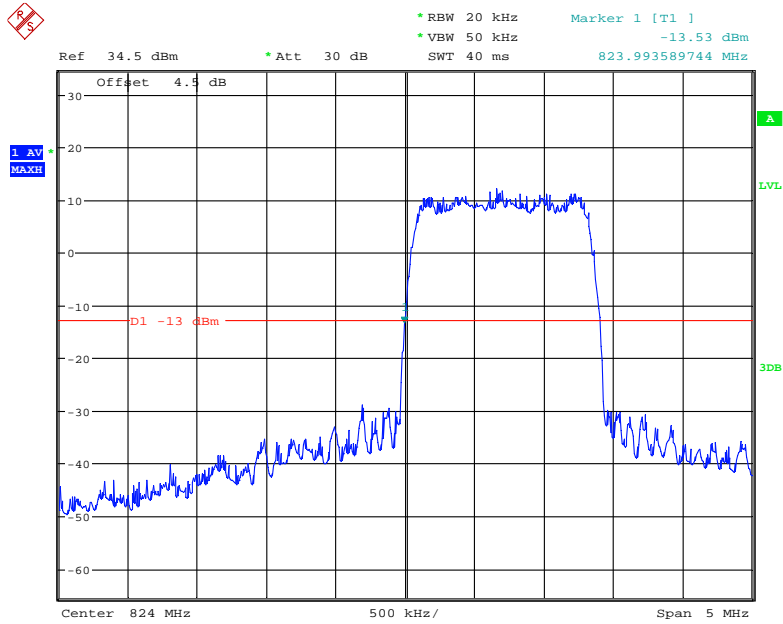
Date: 6.JAN.2018 16:19:18

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



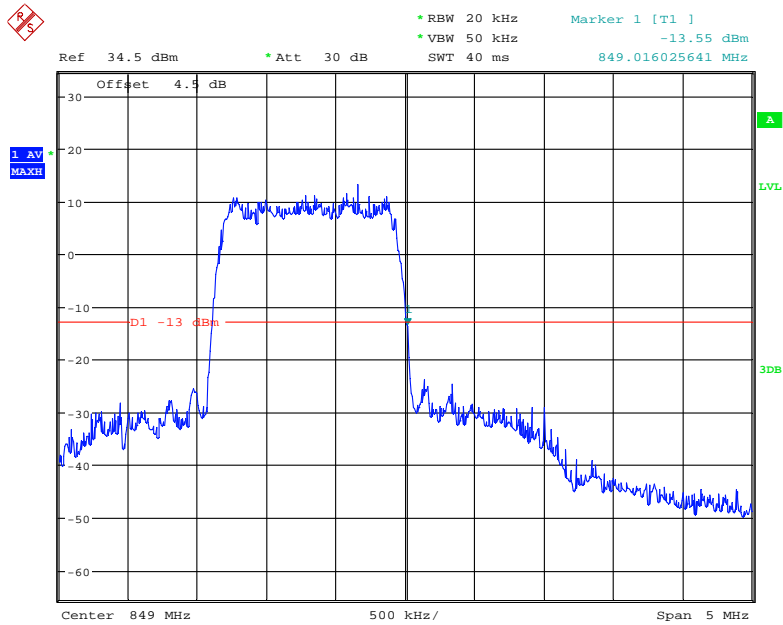
Date: 6.JAN.2018 16:18:36

### Cellular Band, Left Band Edge for CDMA (1\*RTT , BC0) Mode



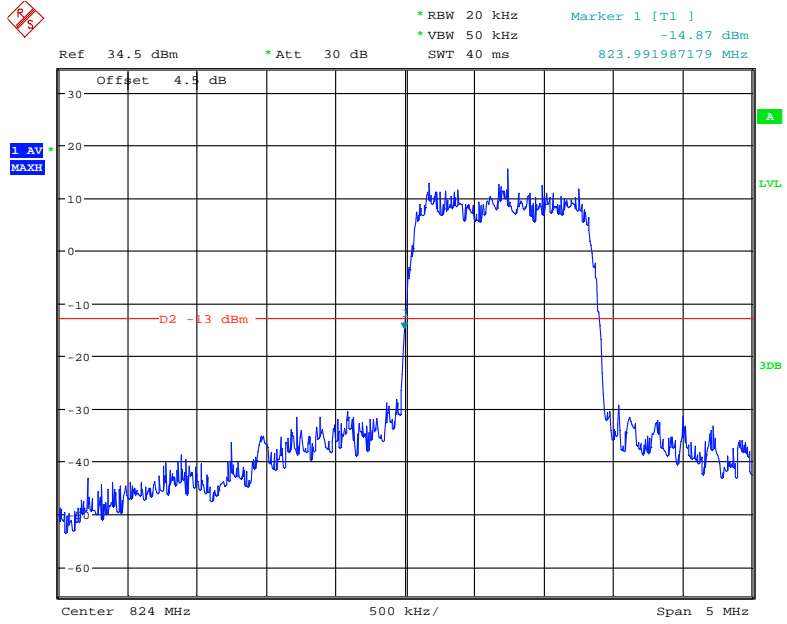
Date: 27.FEB.2018 14:20:29

### Cellular Band, Right Band Edge for CDMA (1\*RTT , BC0) Mode



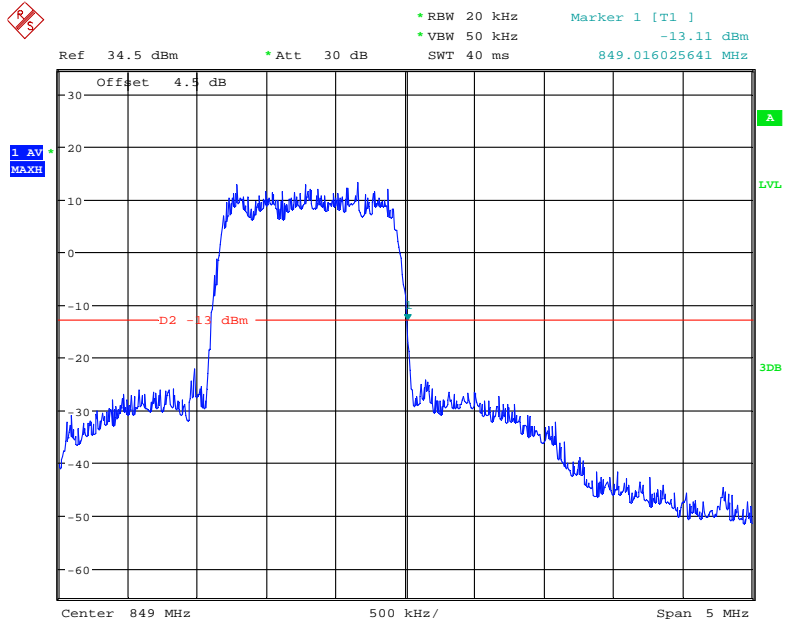
Date: 27.FEB.2018 14:24:11

### Cellular Band, Left Band Edge for CDMA (EV-DO, BC0) Mode



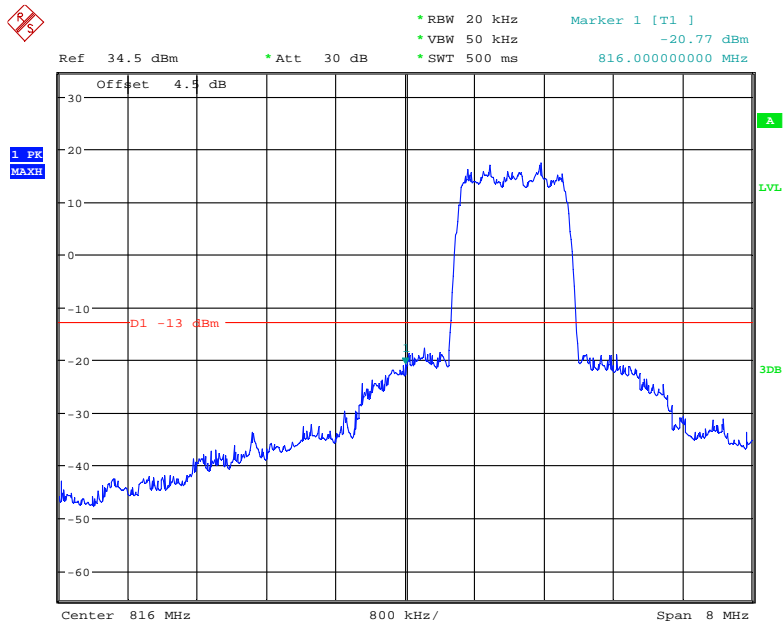
Date: 28.FEB.2018 17:23:58

### Cellular Band, Right Band Edge for CDMA (EV-DO, BC0) Mode



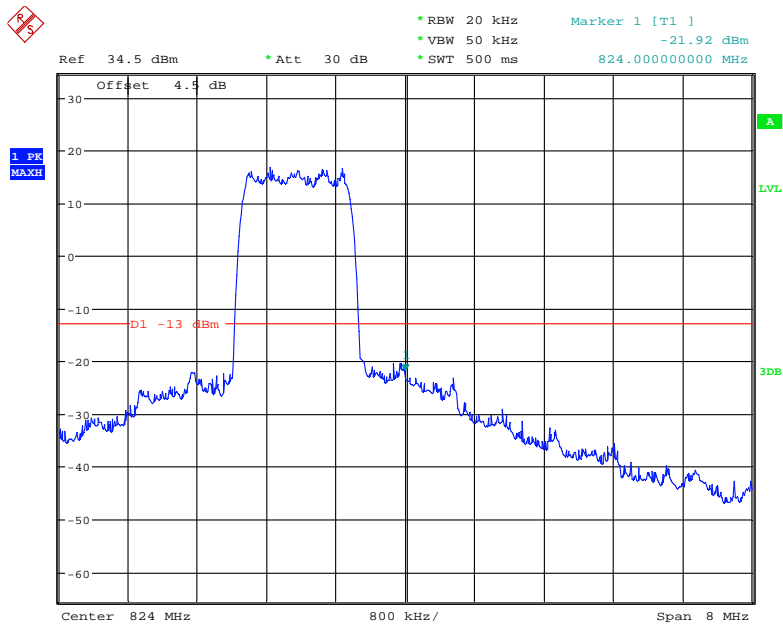
Date: 28.FEB.2018 17:21:10

### Left Band Edge for CDMA (1\*RTT , BC10) Mode



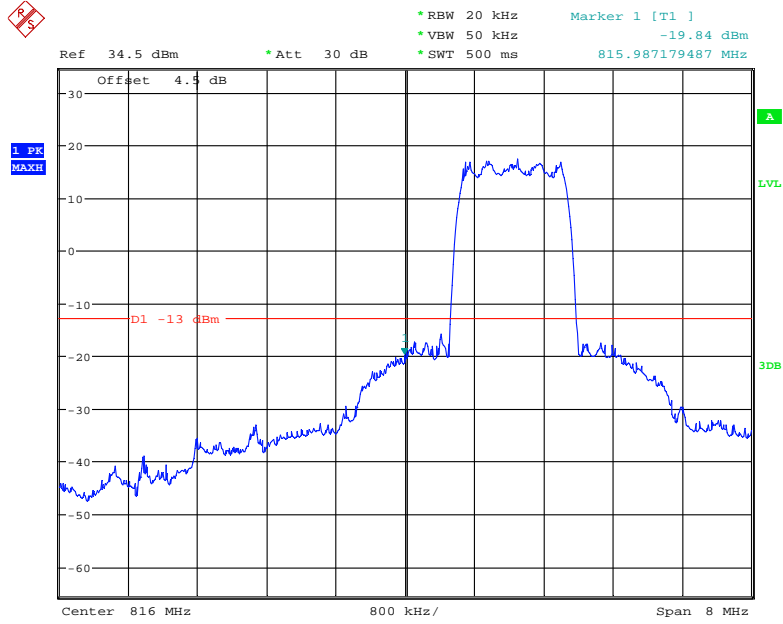
Date: 26.MAR.2018 21:26:11

### Right Band Edge for CDMA (1\*RTT , BC10) Mode



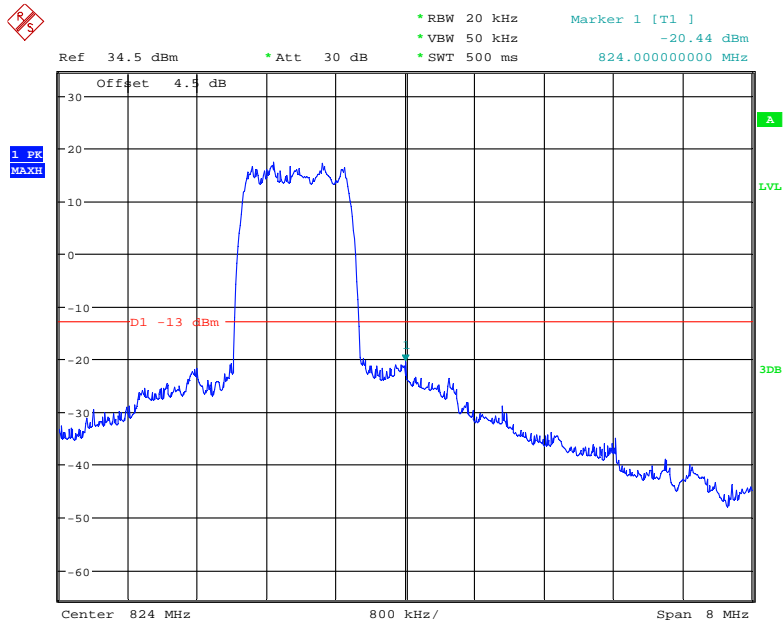
Date: 26.MAR.2018 21:30:15

### Left Band Edge for CDMA (EV-DO, BC10) Mode



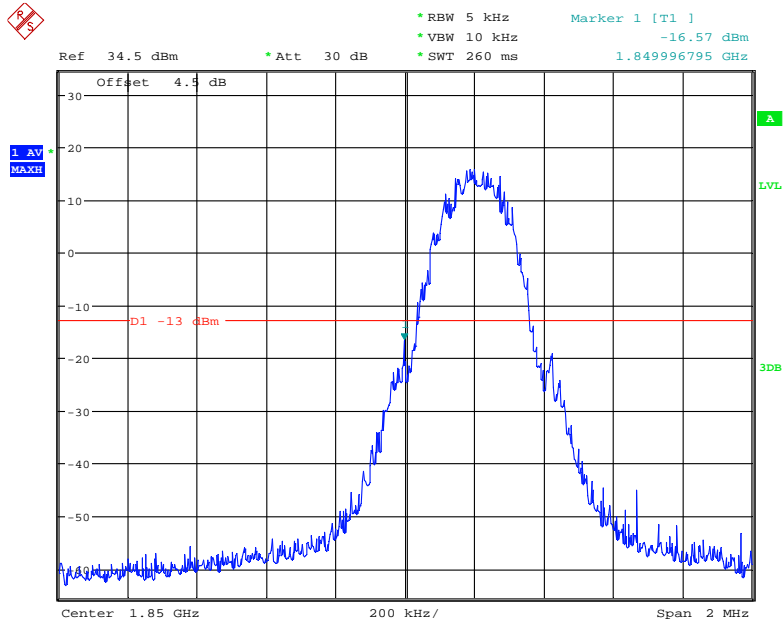
Date: 26.MAR.2018 21:24:18

### Right Band Edge for CDMA (EV-DO, BC10) Mode



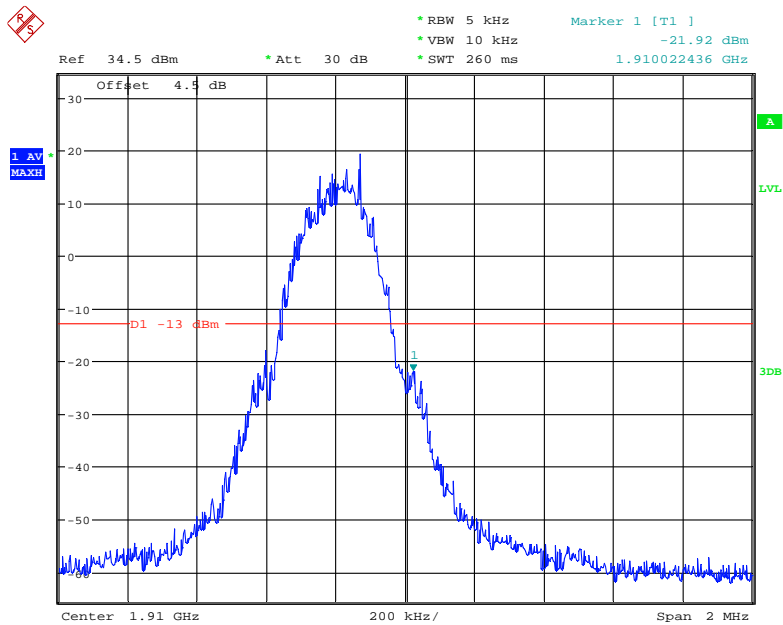
Date: 26.MAR.2018 21:29:08

### PCS Band, Left Band Edge for GSM (GMSK) Mode



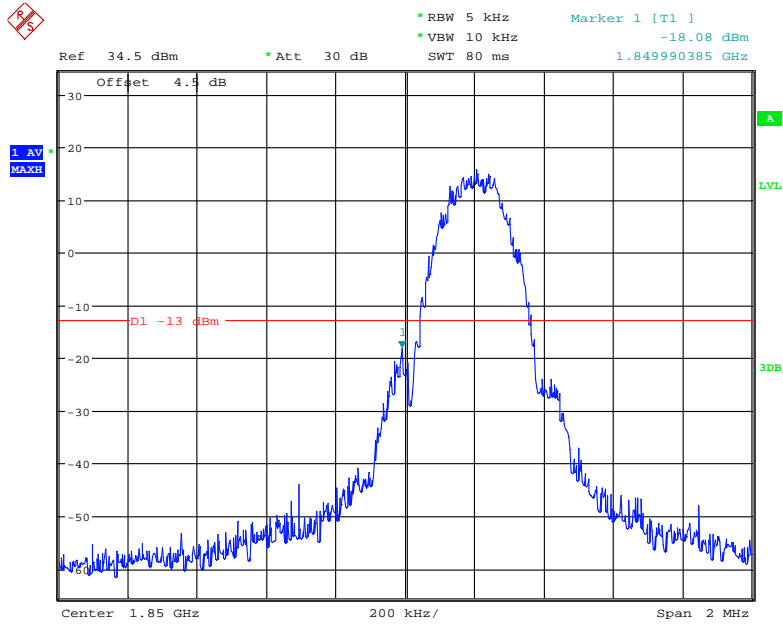
Date: 6.JAN.2018 14:18:52

### PCS Band, Right Band Edge for GSM (GMSK) Mode



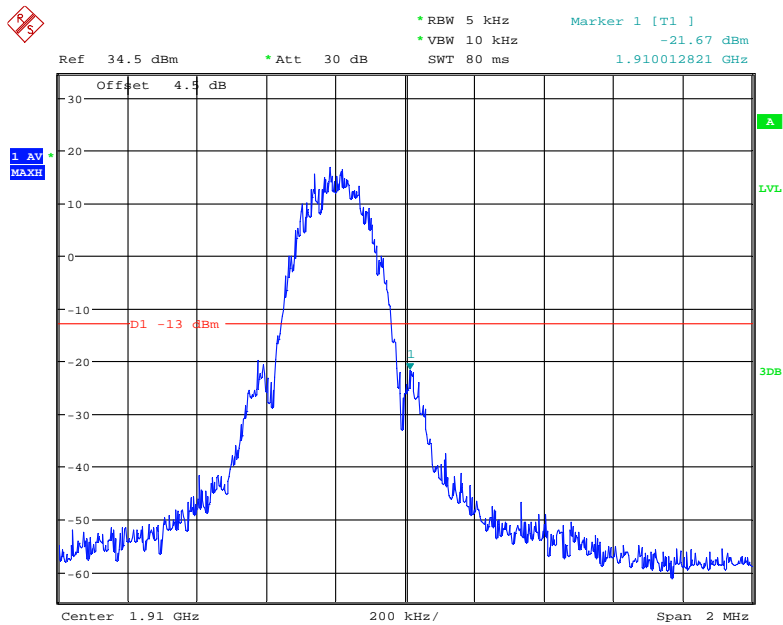
Date: 6.JAN.2018 14:20:40

### PCS Band, Left Band Edge for EGPRS (8PSK) Mode



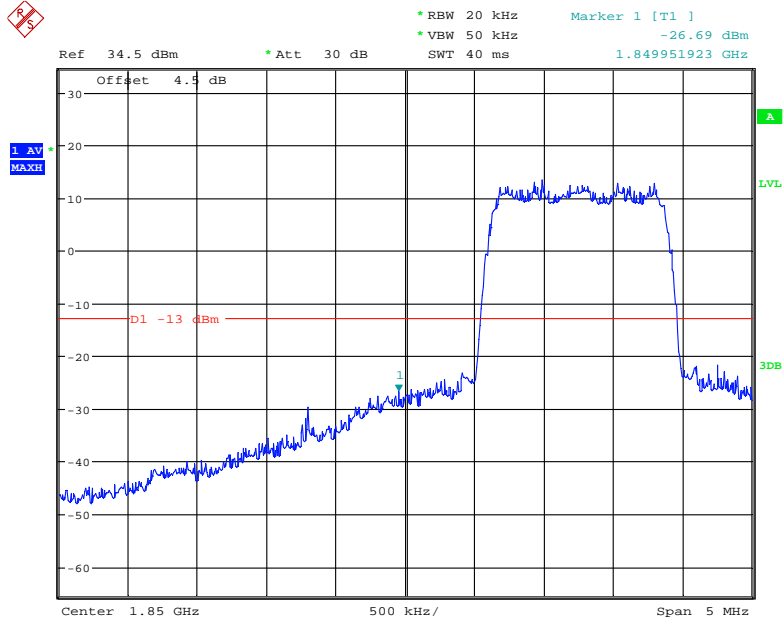
Date: 6.JAN.2018 14:42:03

### PCS Band, Right Band Edge for EGPRS (8PSK) Mode



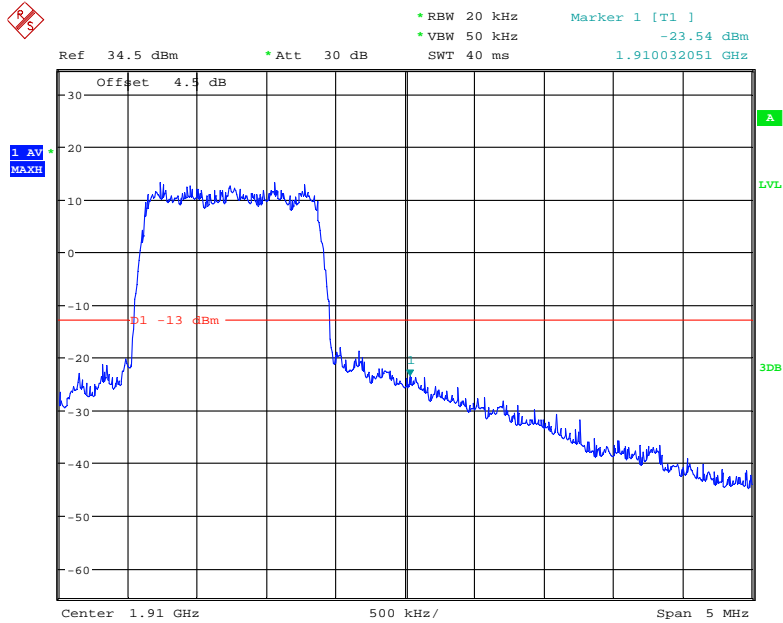
Date: 6.JAN.2018 14:42:48

### Left Band Edge for CDMA (1\*RTT , BC1) Mode



Date: 27.FEB.2018 15:33:02

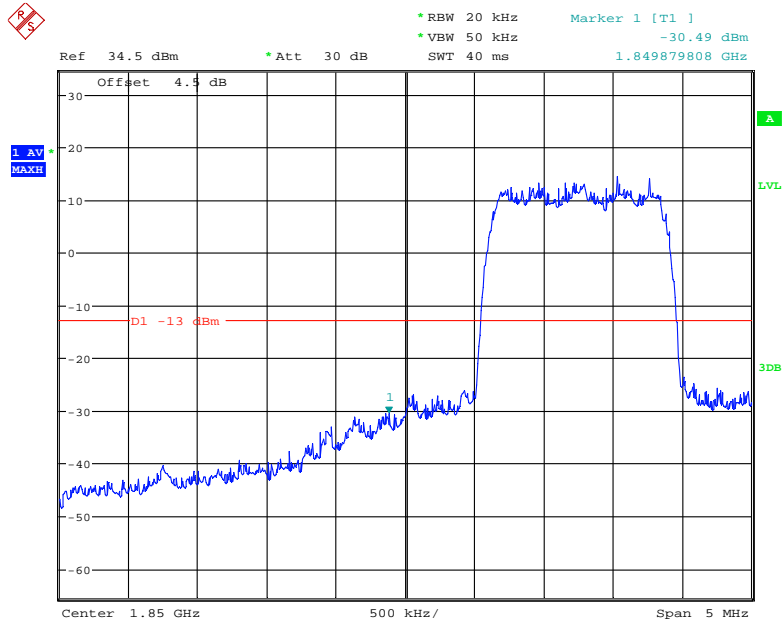
### Right Band Edge for CDMA (1\*RTT , BC1) Mode



Date: 27.FEB.2018 15:31:59

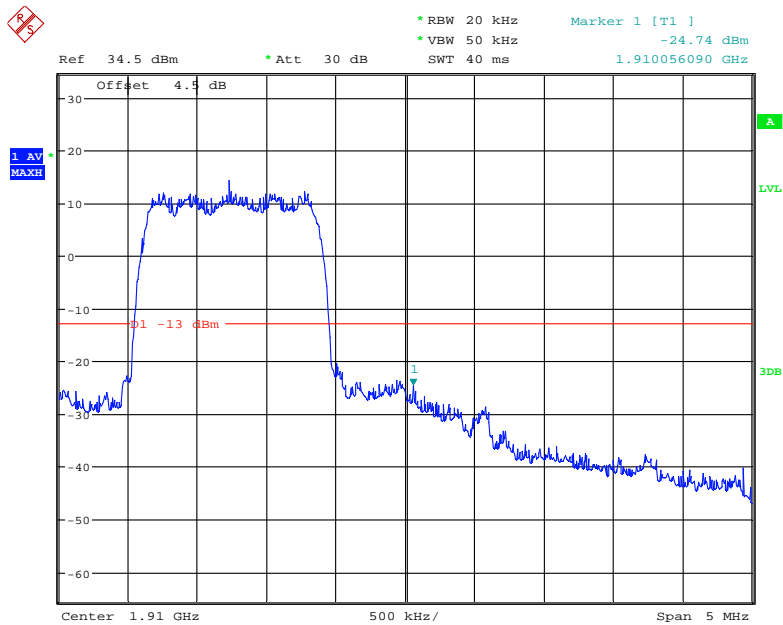


### Left Band Edge for CDMA (EV-DO, BC1) Mode



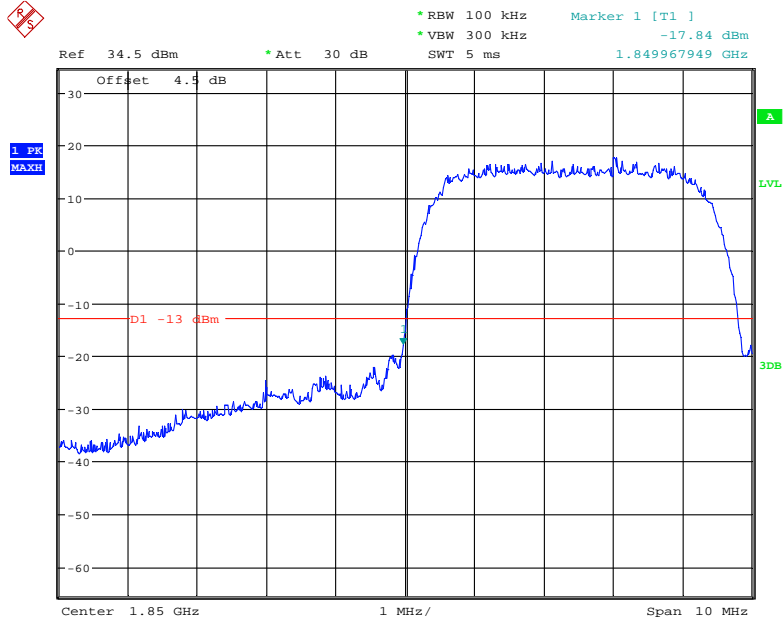
Date: 28.FEB.2018 17:57:26

### Right Band Edge for CDMA (EV-DO, BC1) Mode



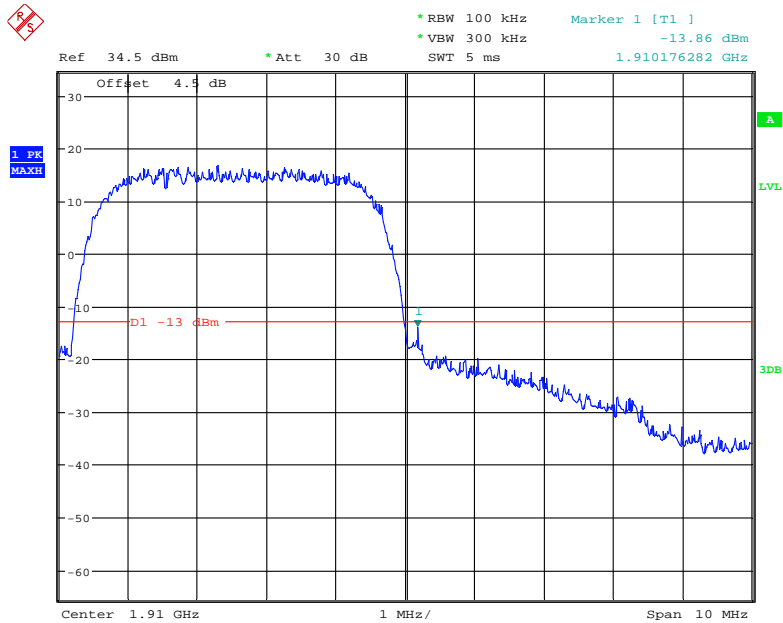
Date: 28.FEB.2018 17:58:31

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



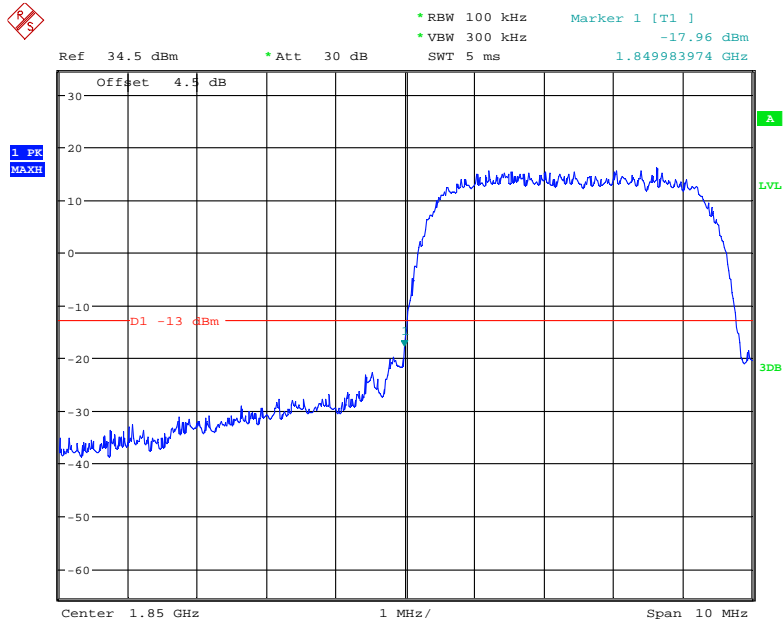
Date: 6.JAN.2018 16:15:21

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



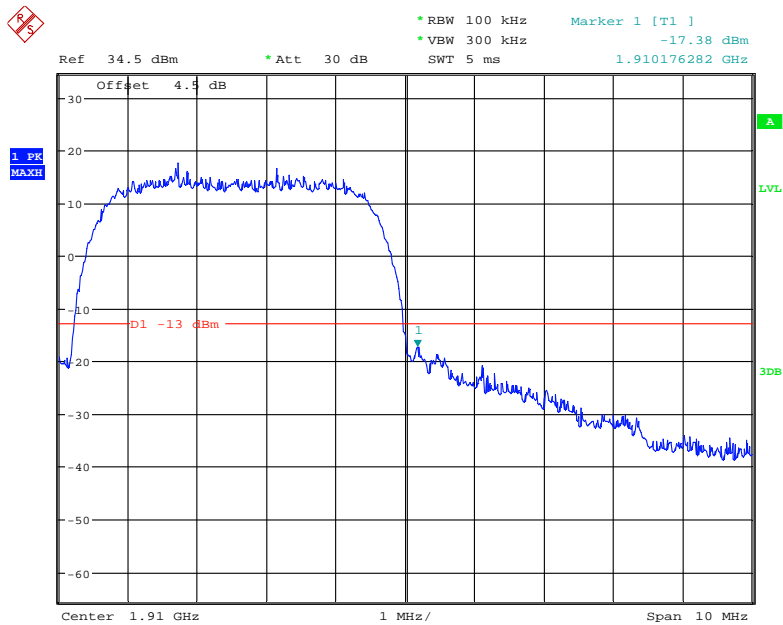
Date: 6.JAN.2018 16:14:49

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



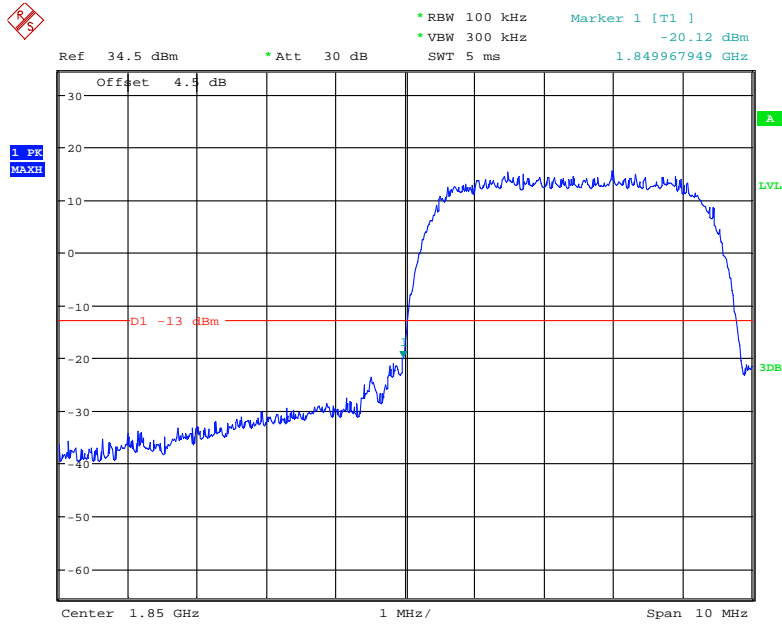
Date: 6.JAN.2018 16:13:30

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



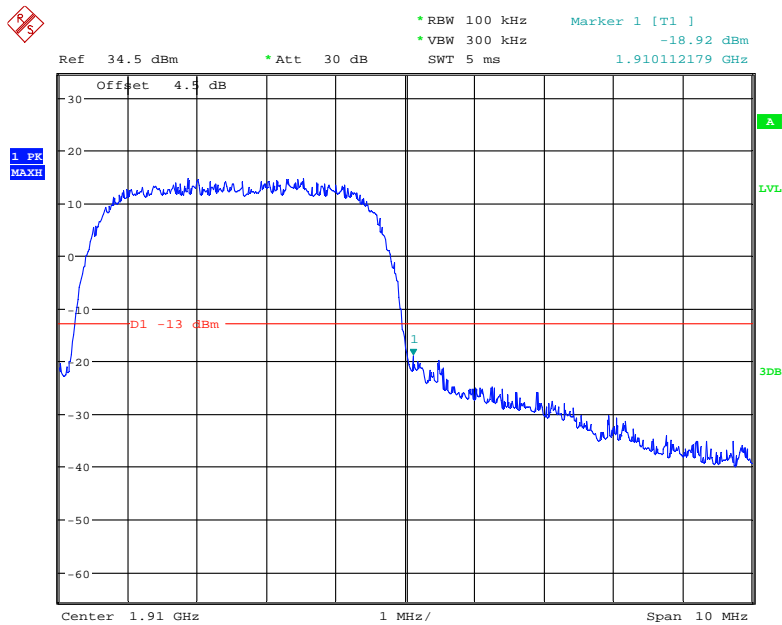
Date: 6.JAN.2018 16:14:07

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



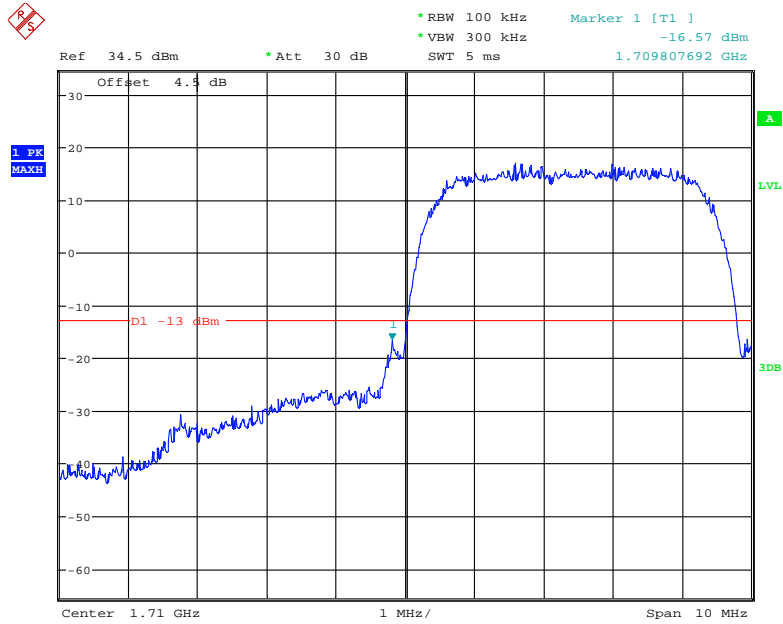
Date: 6.JAN.2018 16:20:51

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



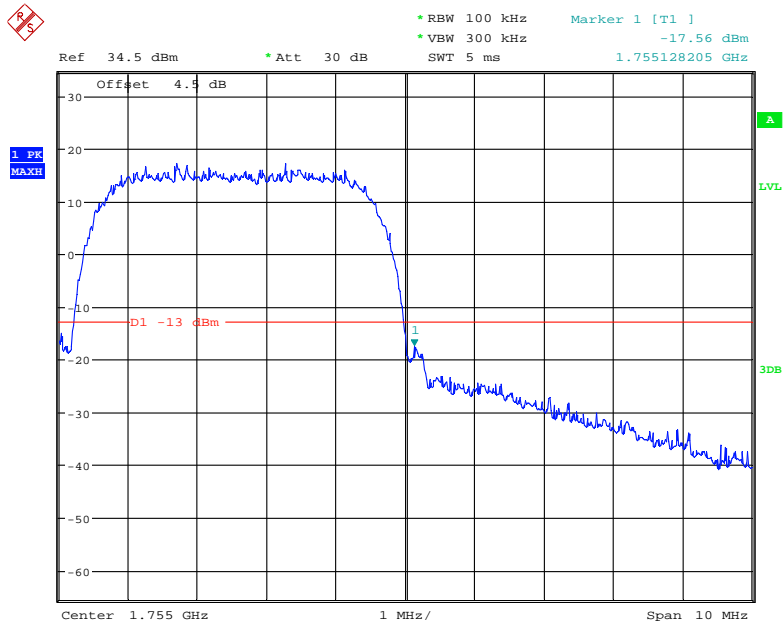
Date: 6.JAN.2018 16:21:30

### AWS Band, Left Band Edge for RMC (BPSK) Mode



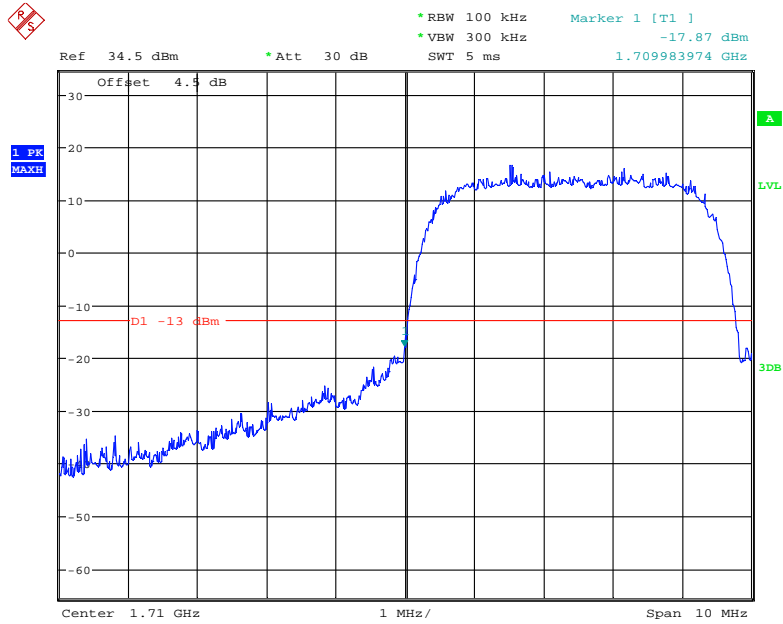
Date: 6.JAN.2018 16:16:08

### AWS Band, Right Band Edge for RMC (BPSK) Mode



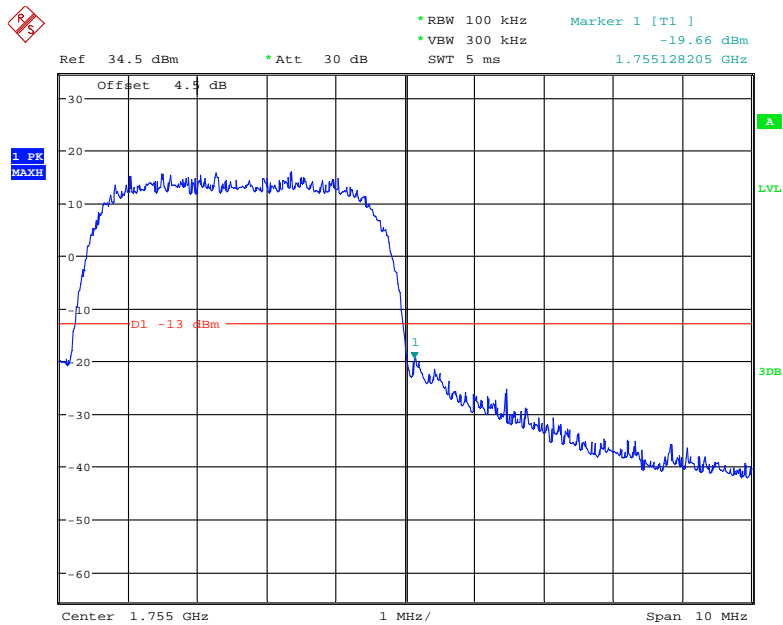
Date: 6.JAN.2018 16:16:33

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



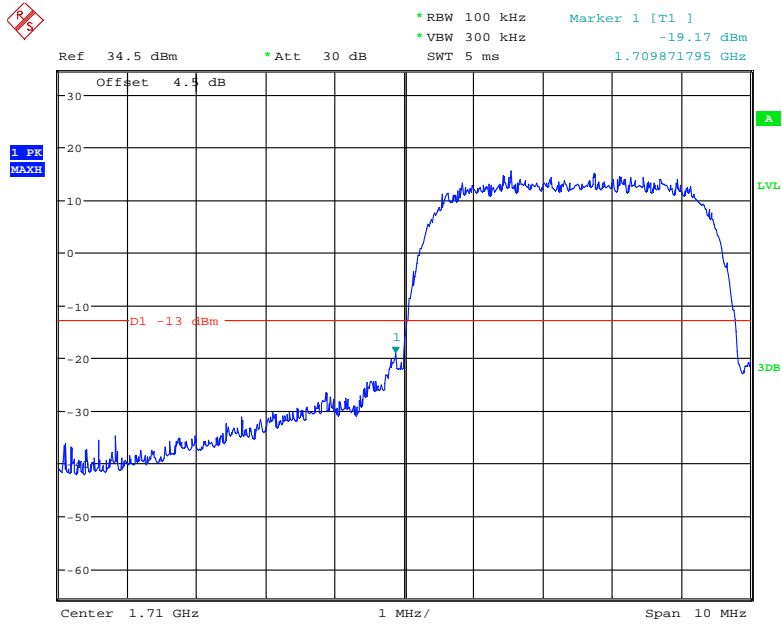
Date: 6.JAN.2018 16:12:11

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



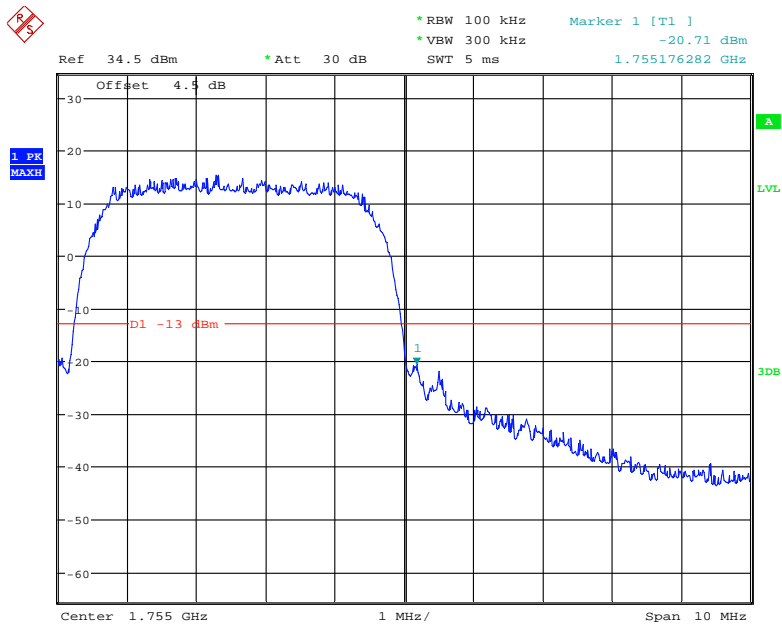
Date: 6.JAN.2018 16:12:49

### AWS Band, Left Band Edge for HSUPA (BPSK) Mode



Date: 6.JAN.2018 16:19:51

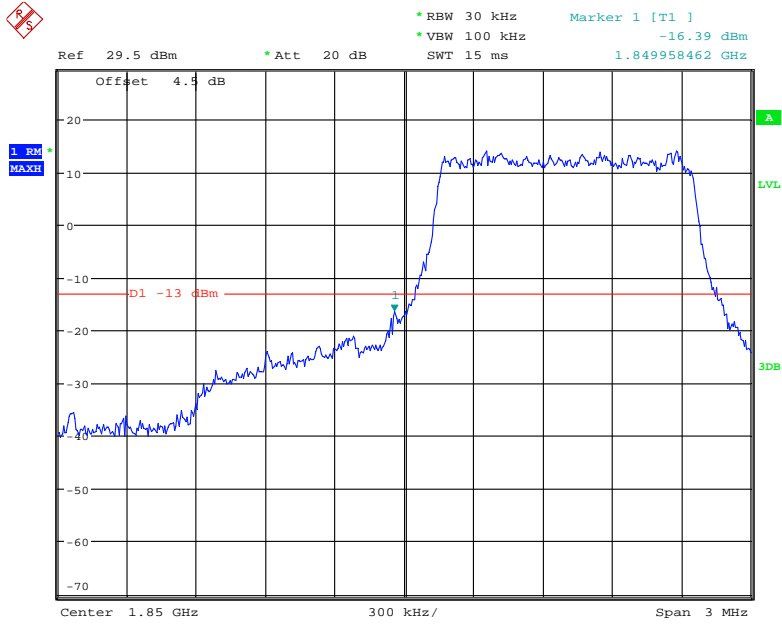
### AWS Band, Right Band Edge for HSUPA (BPSK) Mode



Date: 6.JAN.2018 16:20:22

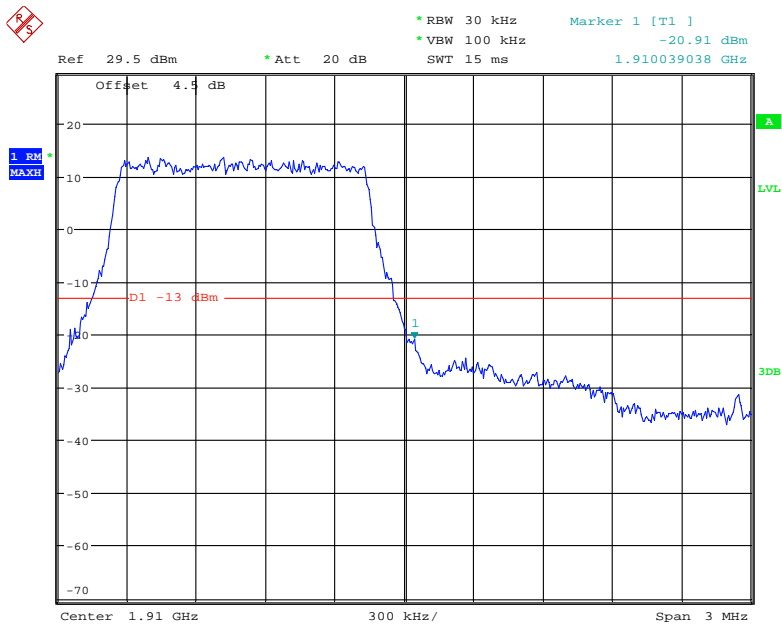
LTE Band 2:

QPSK (1.4 MHz, FULL RB) - Left Band Edge



Date: 8.JAN.2018 09:55:46

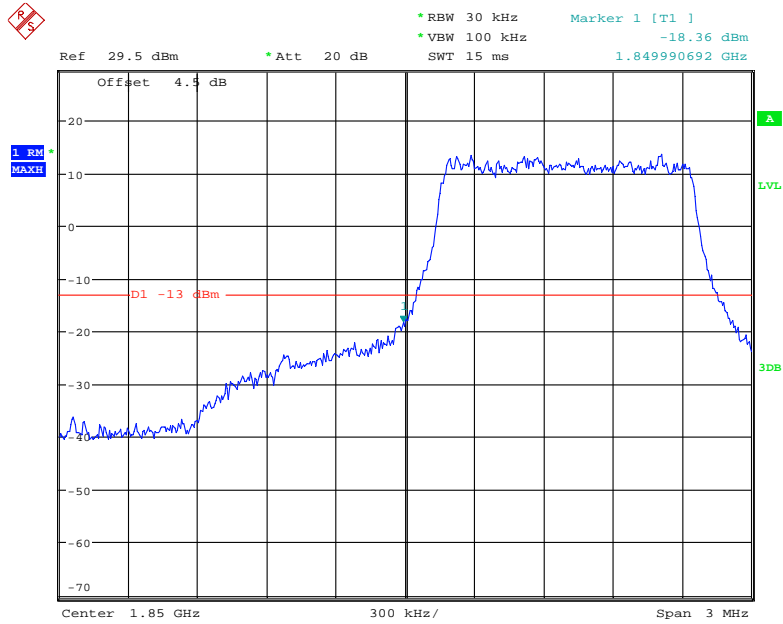
QPSK (1.4 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 09:53:08

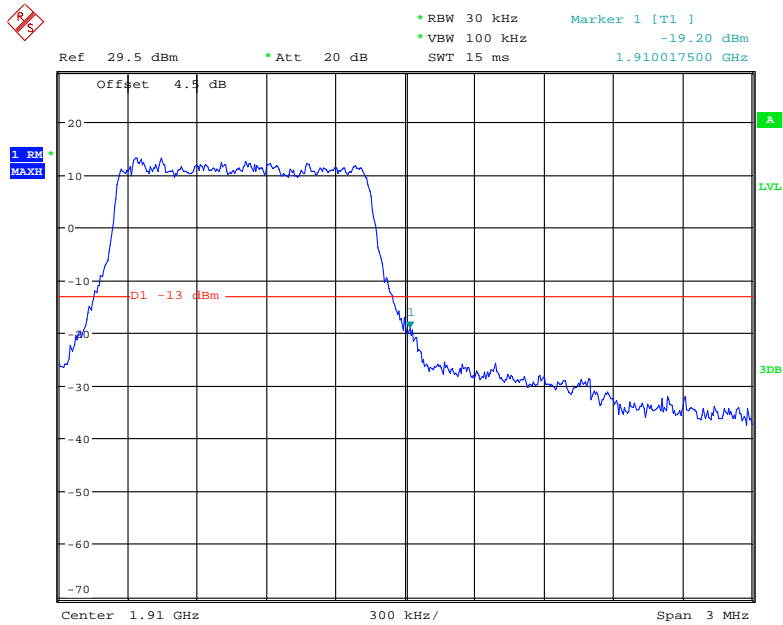


### 16-QAM (1.4 MHz, FULL RB) - Left Band Edge



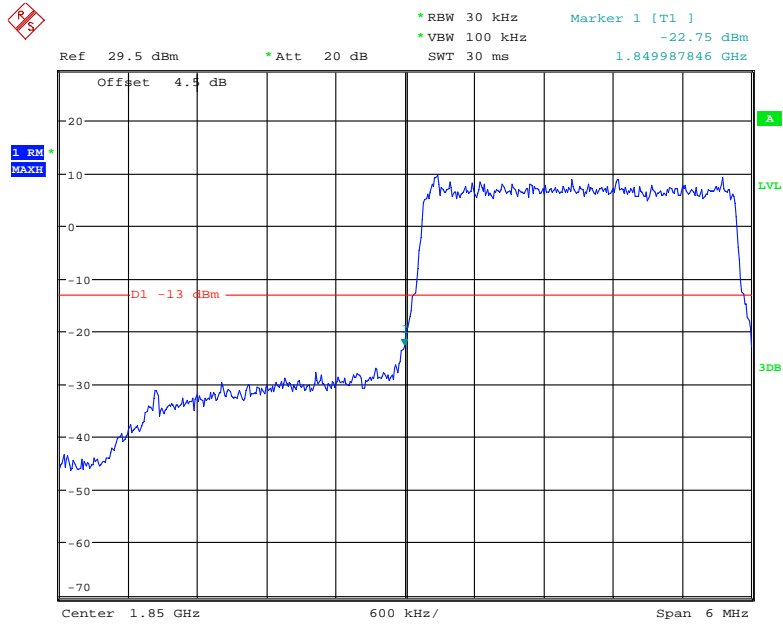
Date: 8.JAN.2018 09:55:03

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



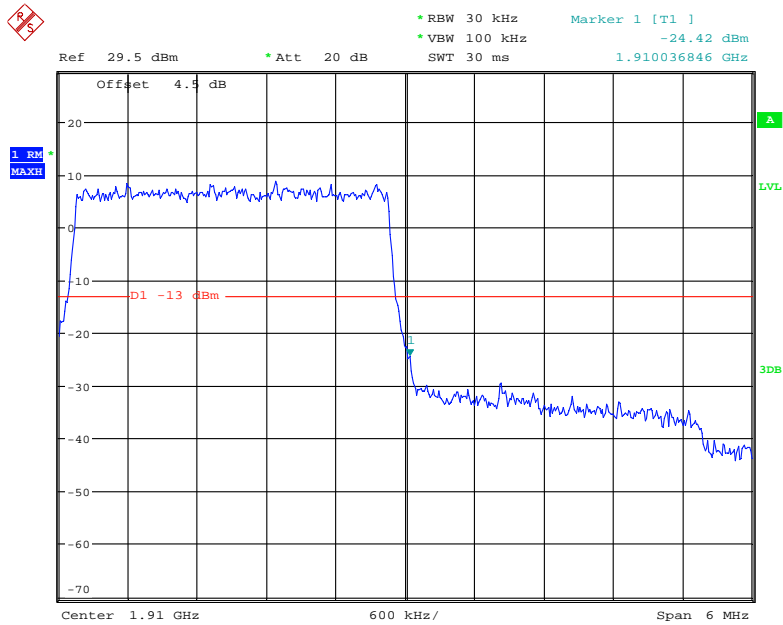
Date: 8.JAN.2018 09:54:12

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



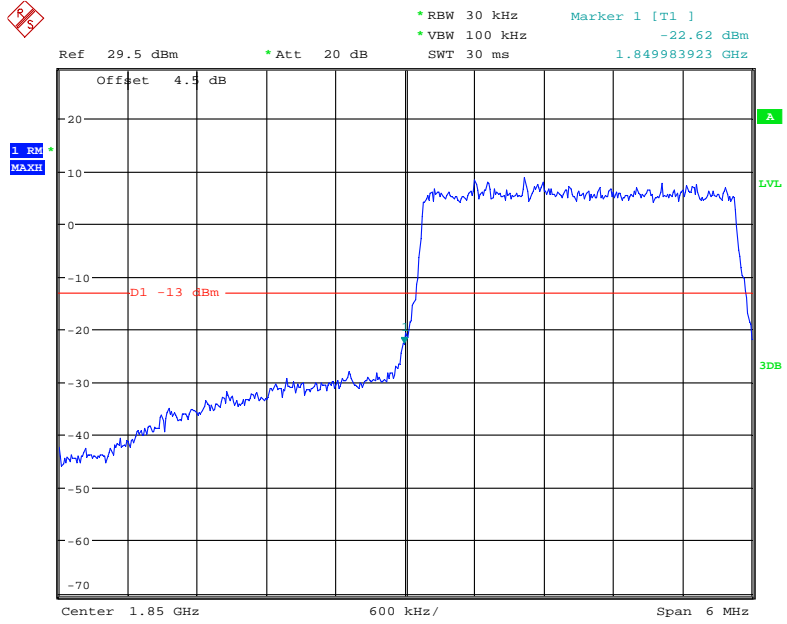
Date: 8.JAN.2018 09:36:33

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



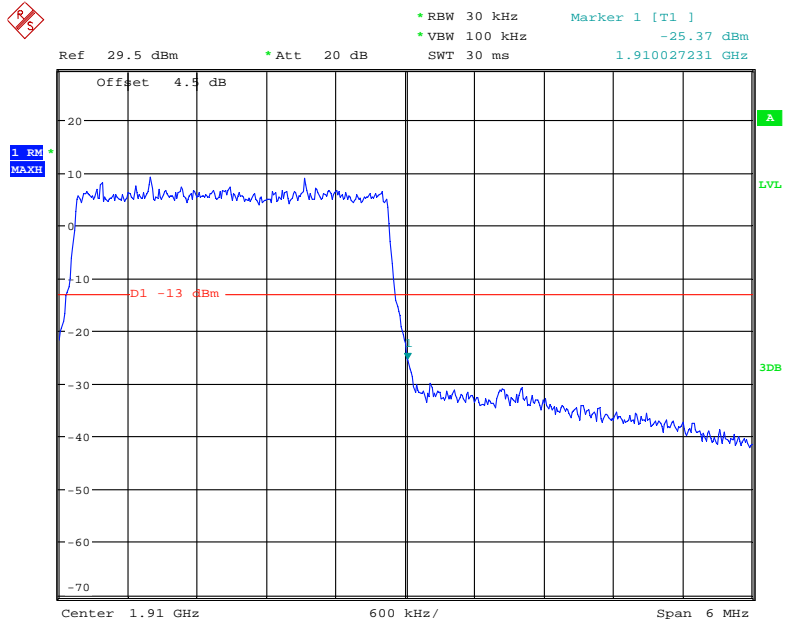
Date: 8.JAN.2018 09:33:49

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



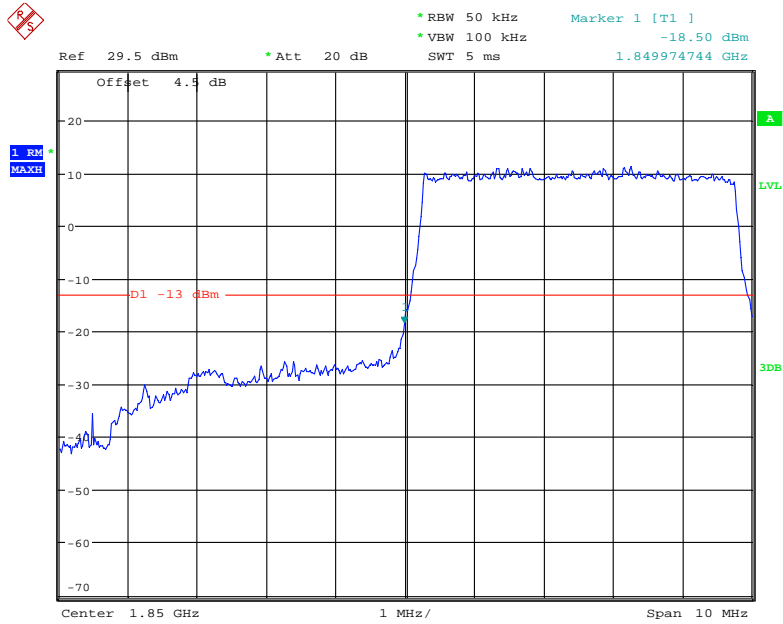
Date: 8.JAN.2018 09:35:46

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



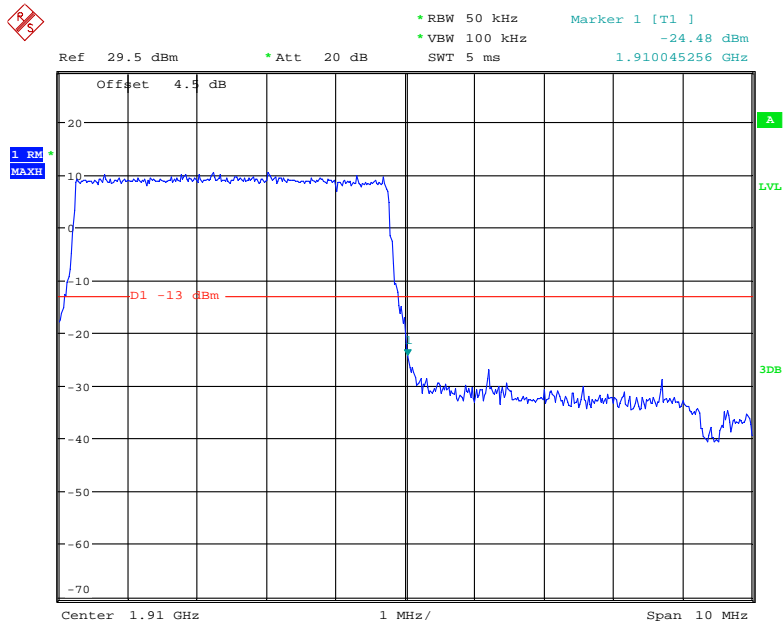
Date: 8.JAN.2018 09:34:28

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



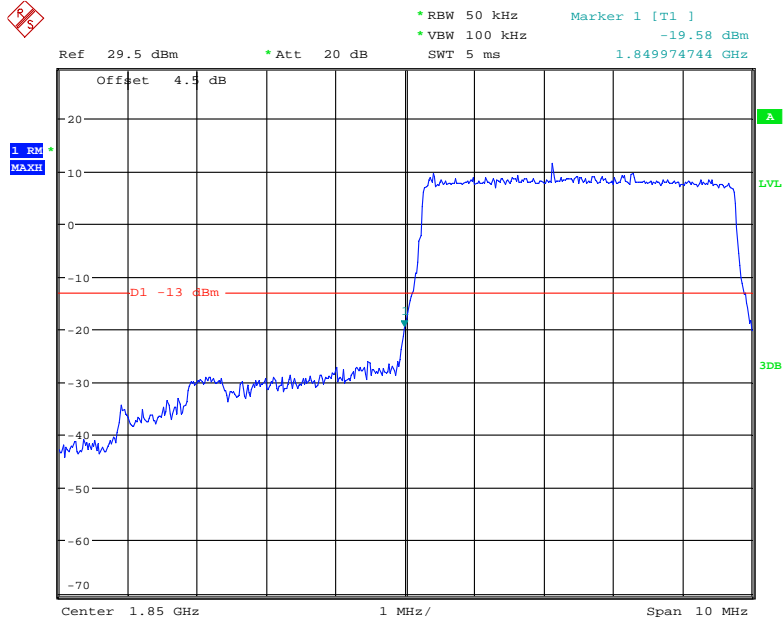
Date: 8.JAN.2018 09:48:47

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



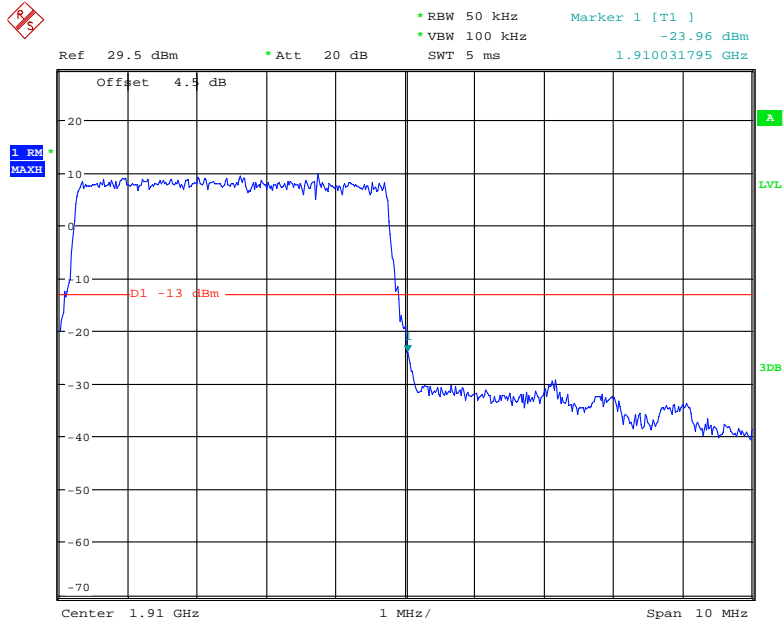
Date: 8.JAN.2018 09:50:27

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



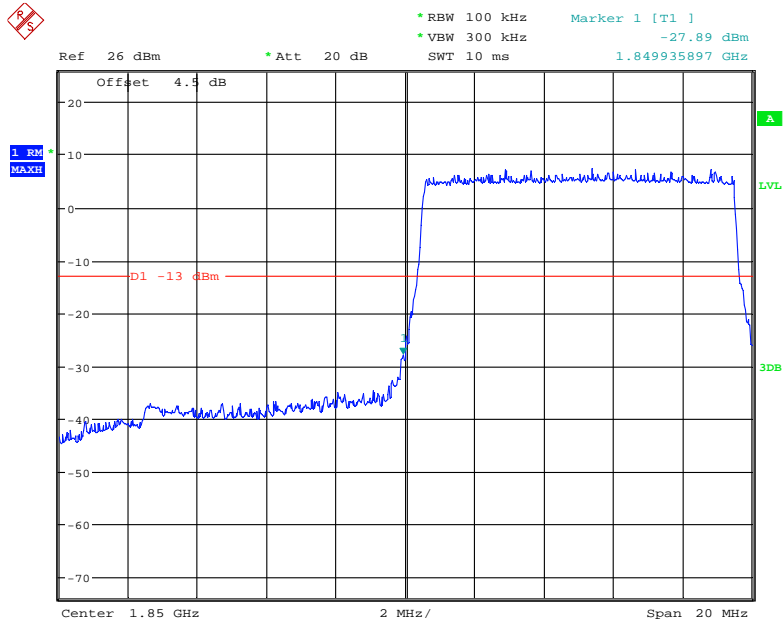
Date: 8.JAN.2018 09:41:25

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



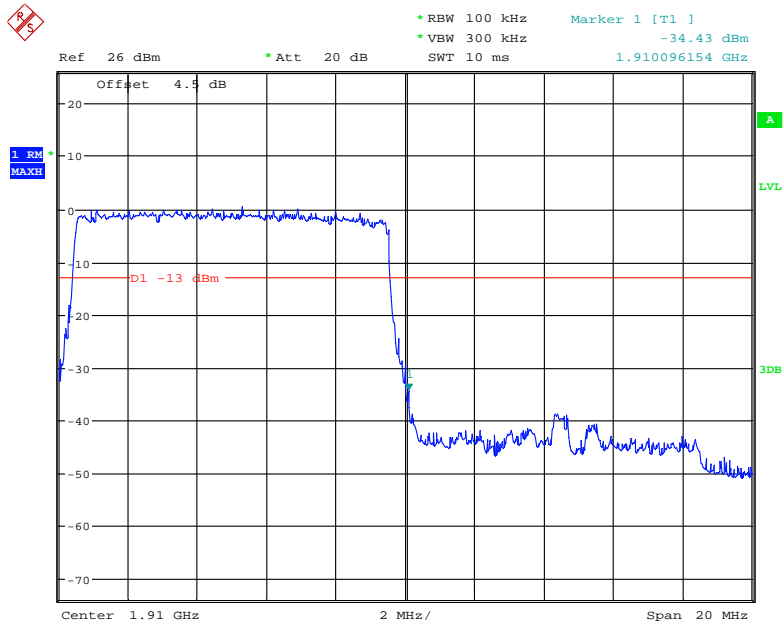
Date: 8.JAN.2018 09:51:32

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



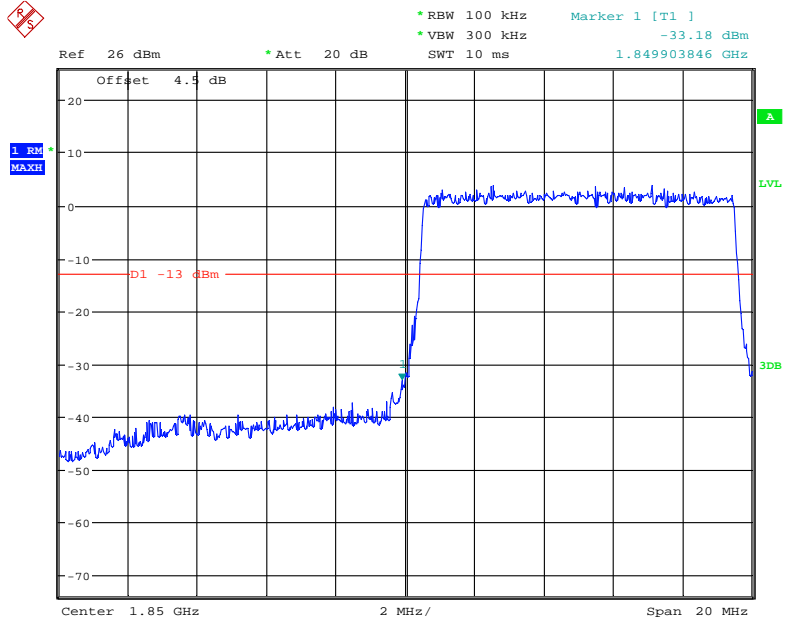
Date: 8.FEB.2018 14:50:46

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



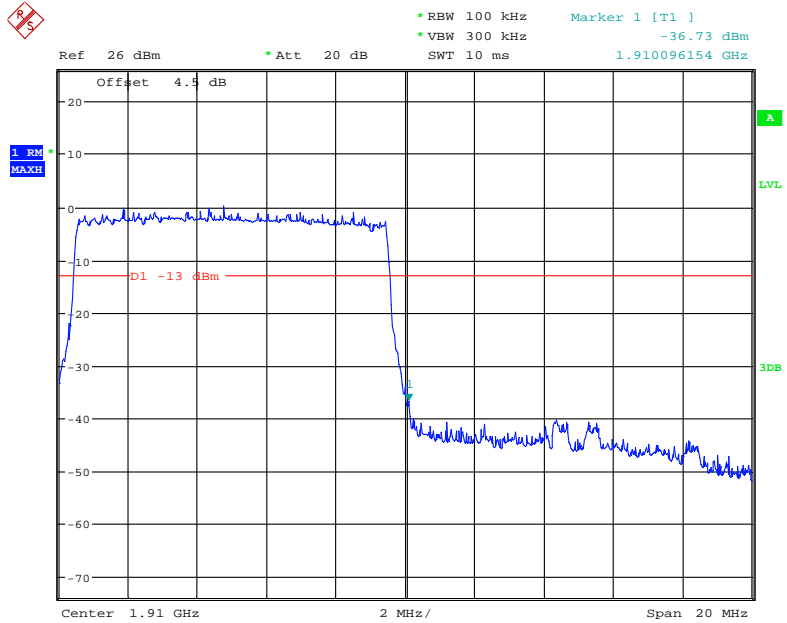
Date: 8.FEB.2018 14:54:19

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



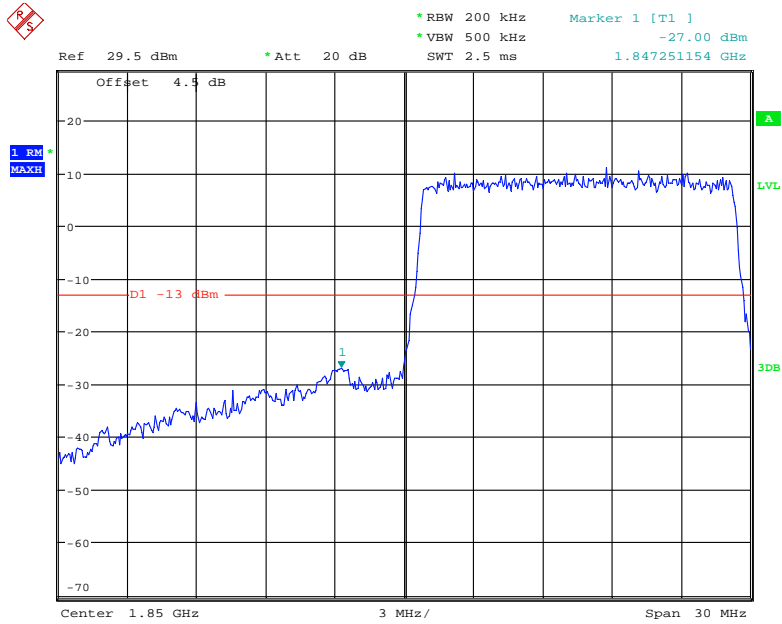
Date: 8.FEB.2018 14:52:45

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



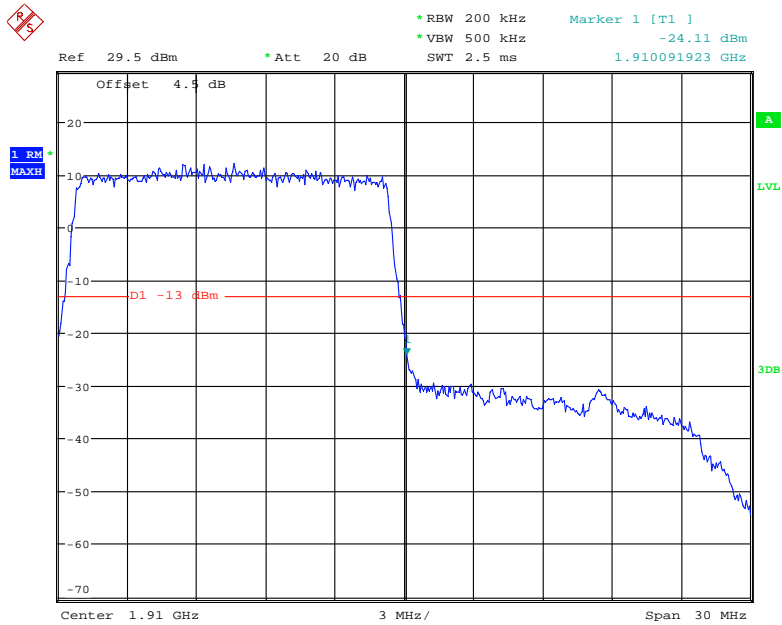
Date: 8.FEB.2018 14:53:52

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



Date: 8.JAN.2018 10:07:12

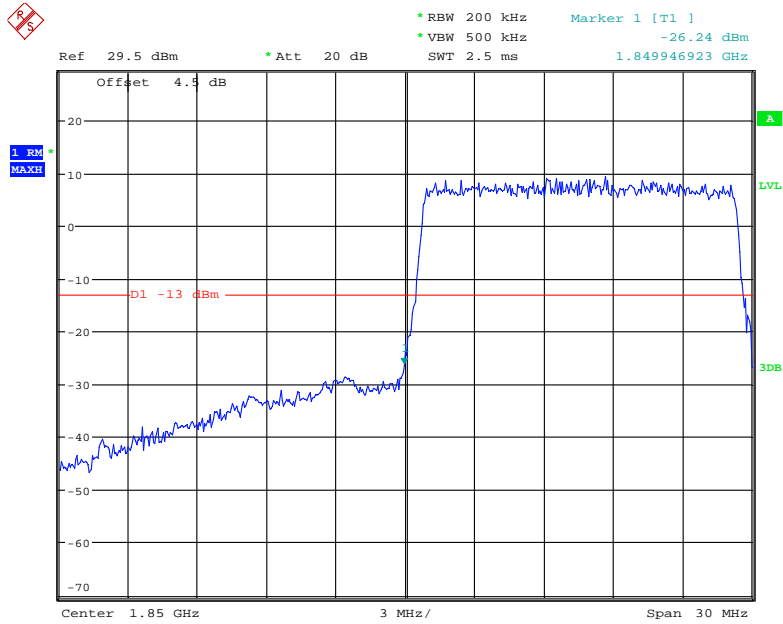
### QPSK (15.0 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 10:04:13

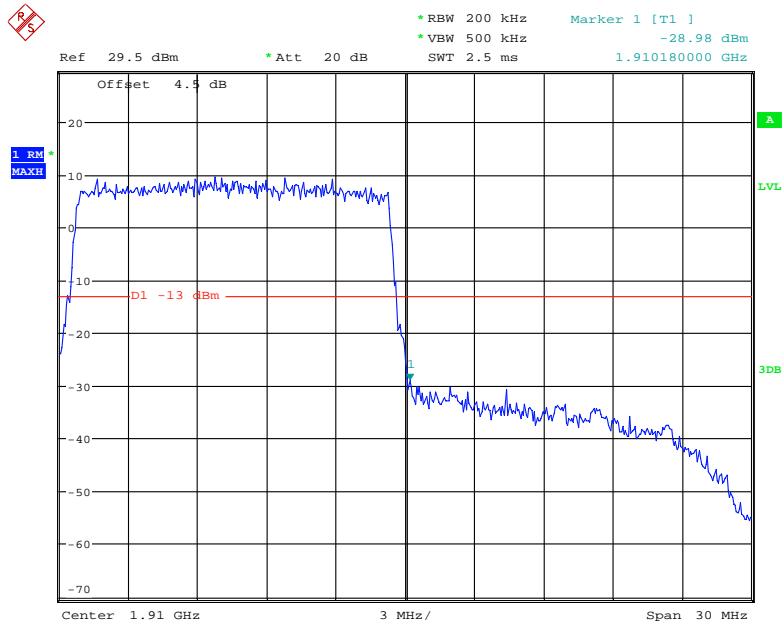


### 16-QAM (15.0 MHz, FULL RB) - Left Band Edge



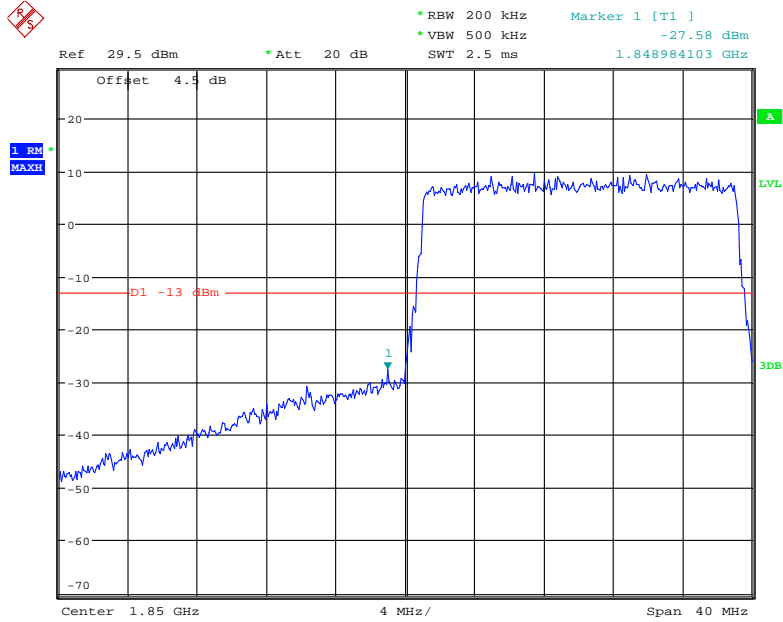
Date: 8.JAN.2018 10:06:34

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



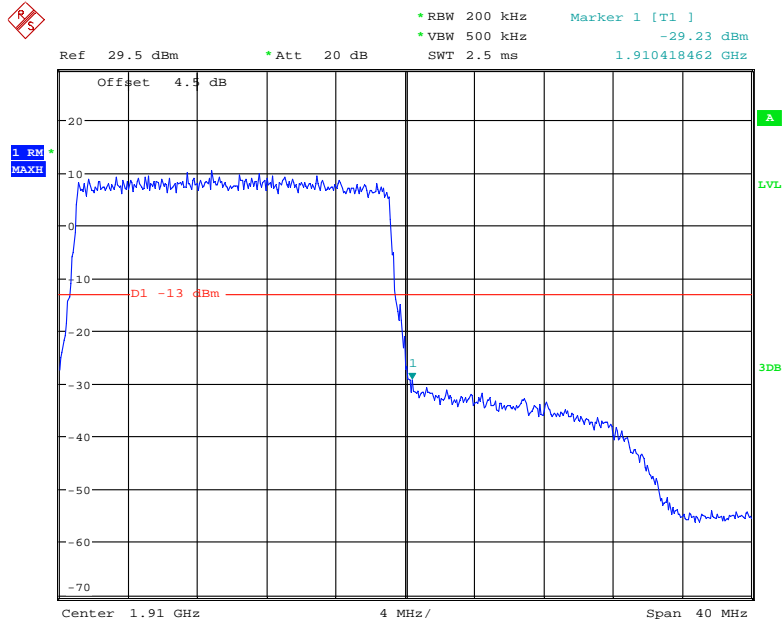
Date: 8.JAN.2018 10:05:16

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



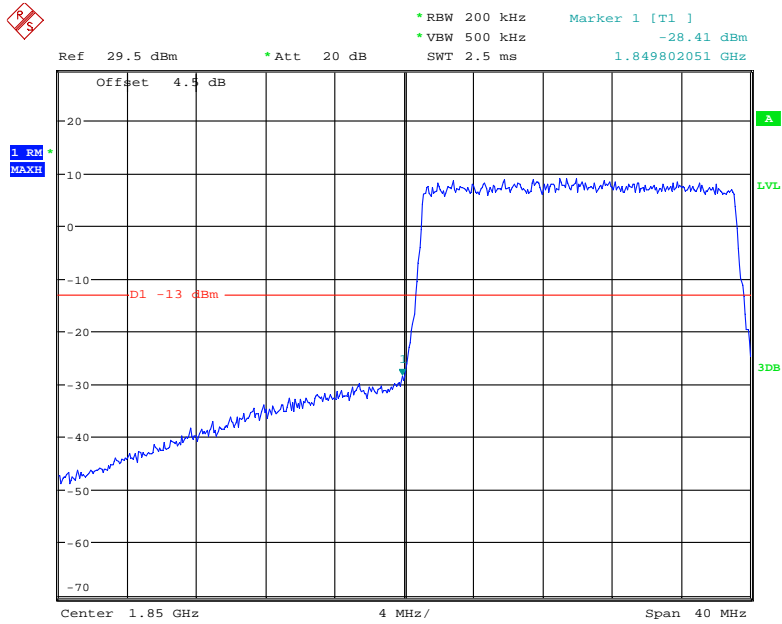
Date: 8.JAN.2018 10:10:58

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



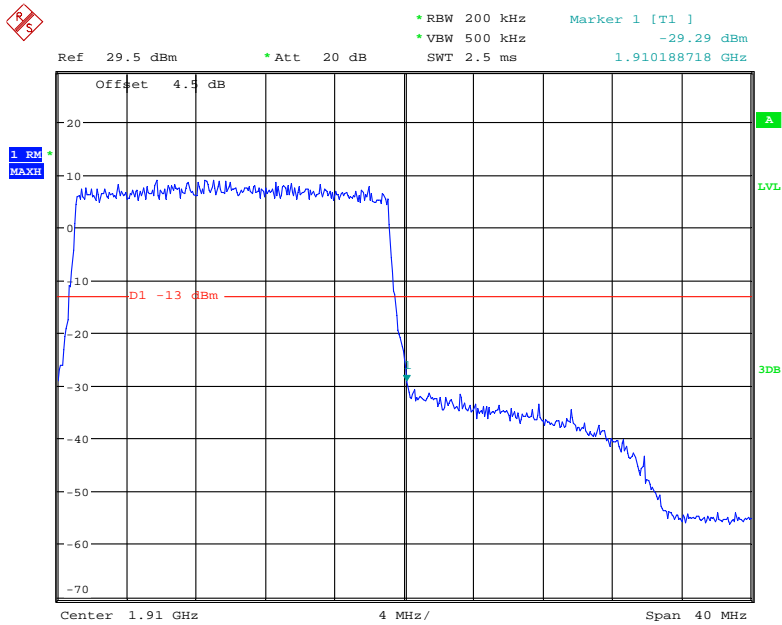
Date: 8.JAN.2018 10:18:44

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



Date: 8.JAN.2018 10:16:15

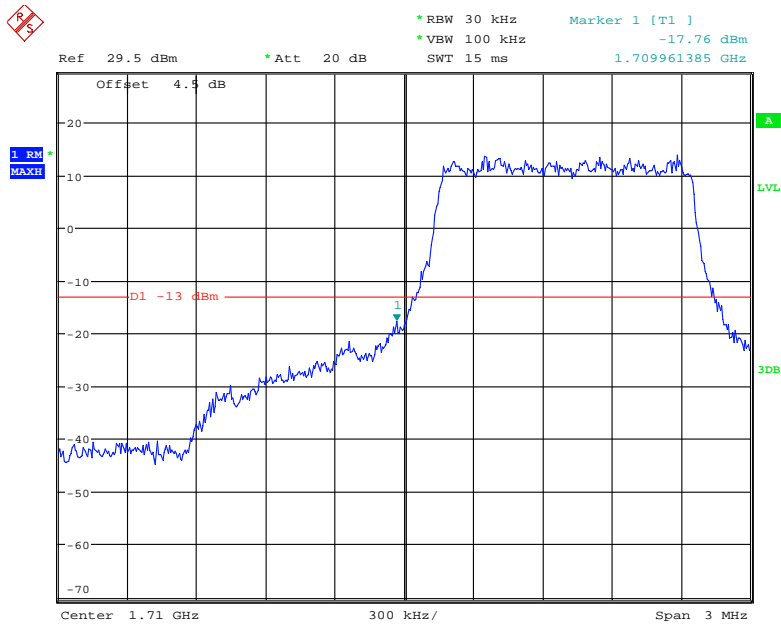
### 16-QAM (20.0 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 10:17:43

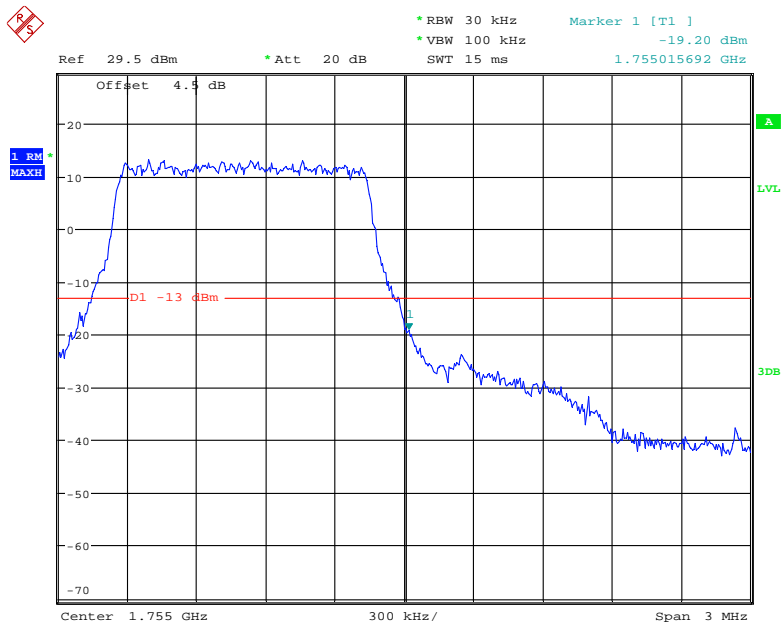
LTE Band 4:

QPSK (1.4 MHz, FULL RB) - Left Band Edge



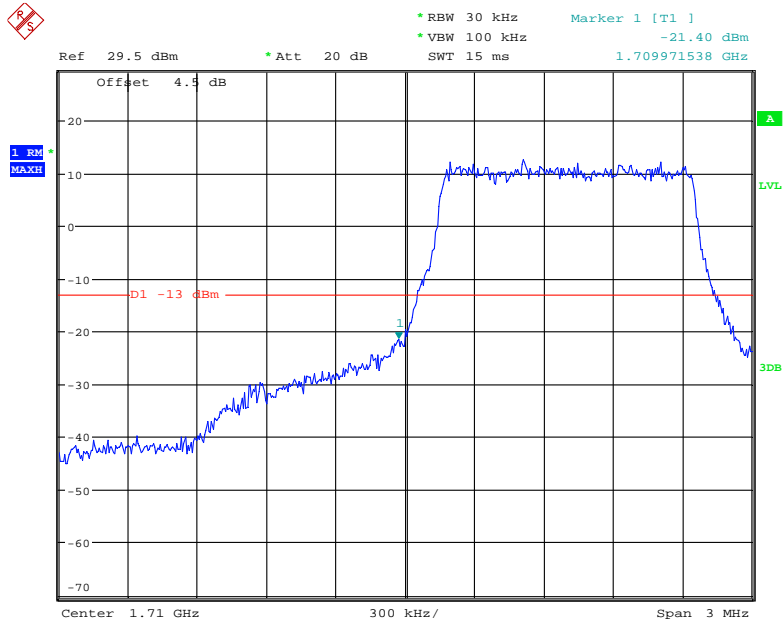
Date: 8.JAN.2018 10:52:27

QPSK (1.4 MHz, FULL RB) - Right Band Edge



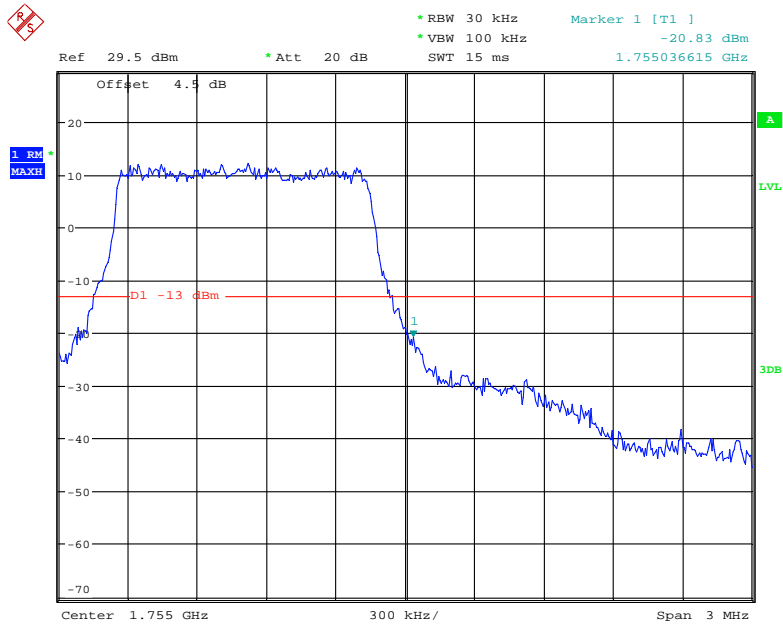
Date: 8.JAN.2018 10:50:54

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



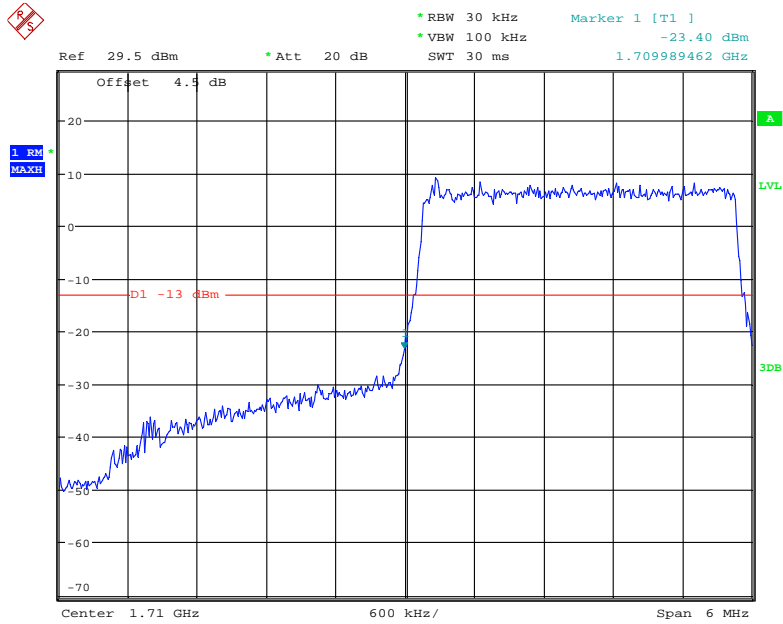
Date: 8.JAN.2018 10:51:59

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



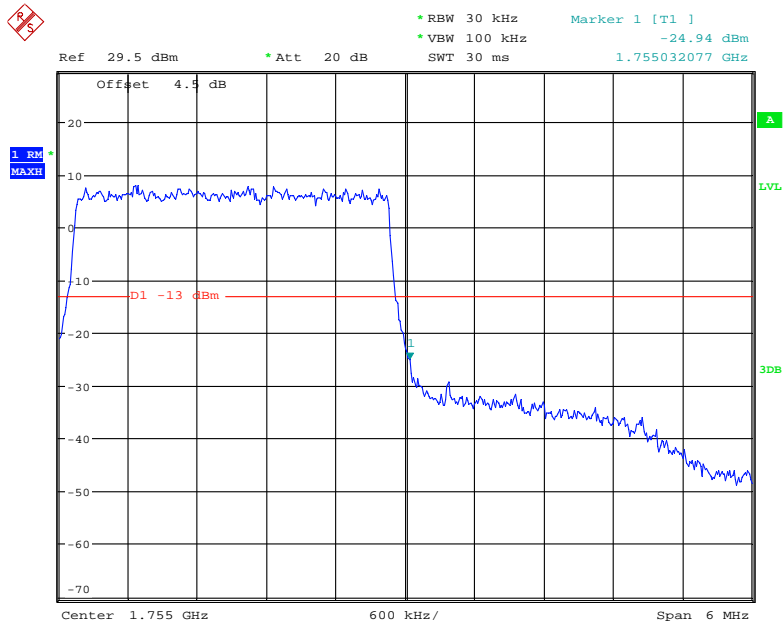
Date: 8.JAN.2018 10:51:19

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



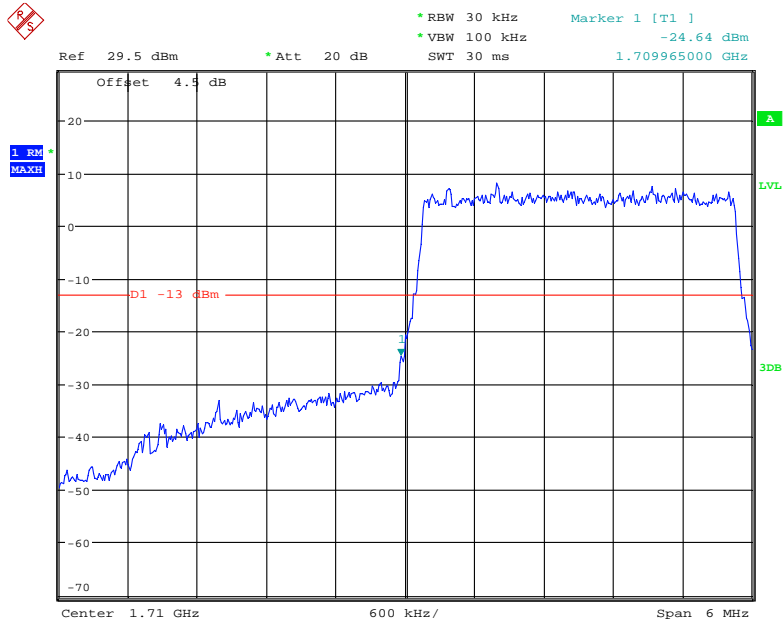
Date: 8.JAN.2018 10:55:44

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



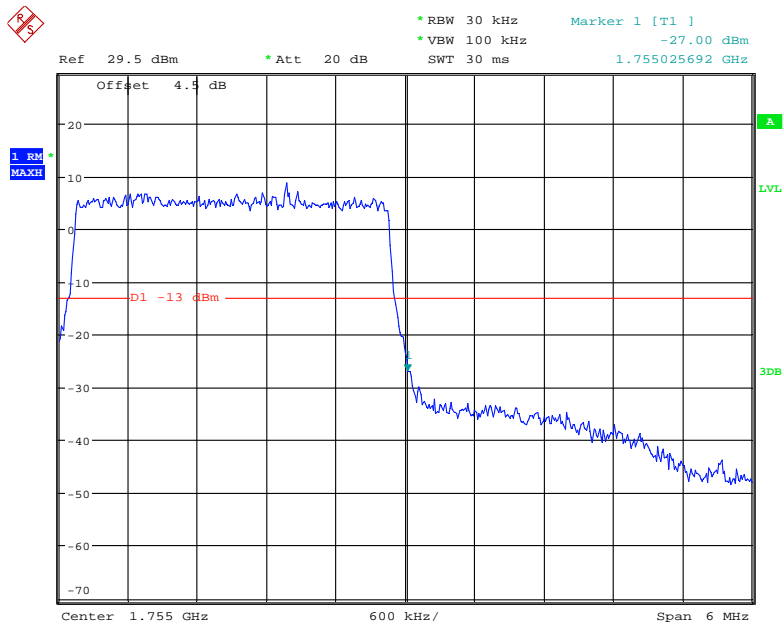
Date: 8.JAN.2018 10:41:57

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



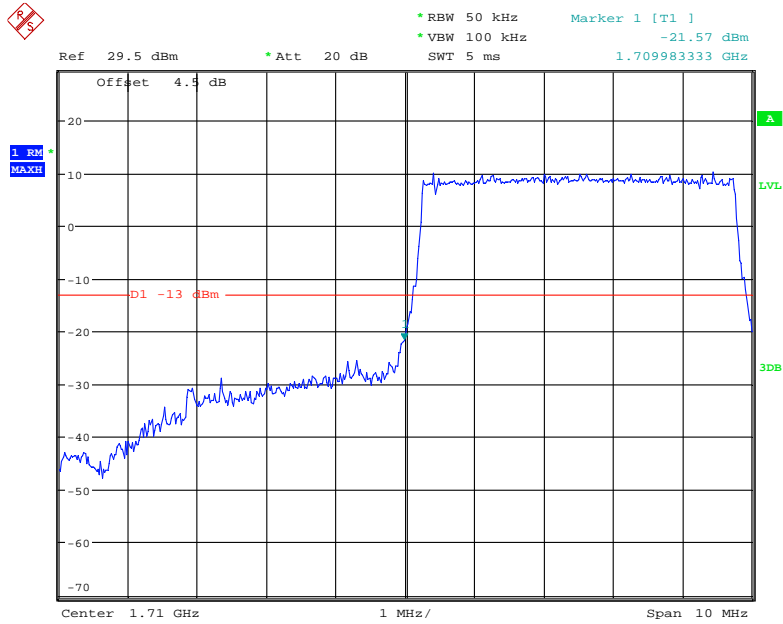
Date: 8.JAN.2018 10:43:33

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



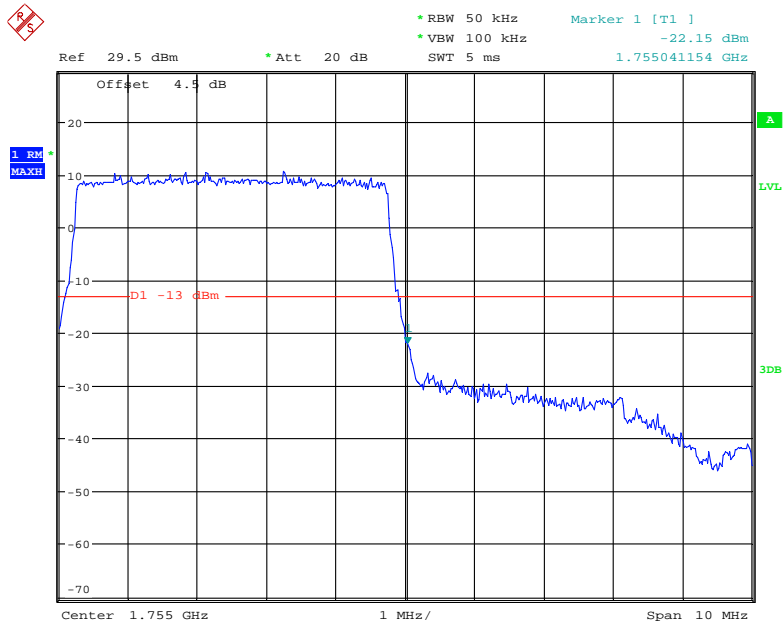
Date: 8.JAN.2018 10:42:34

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



Date: 8.JAN.2018 10:37:25

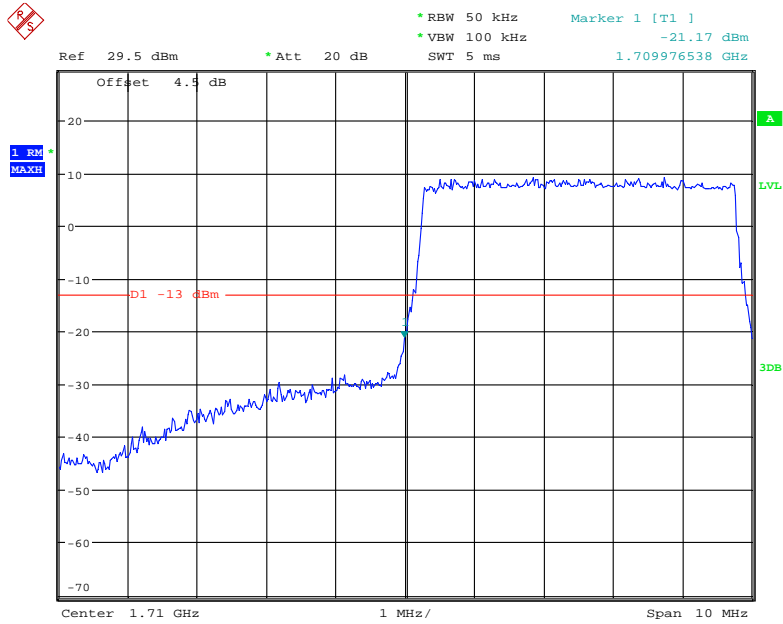
### QPSK (5.0 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 10:38:37

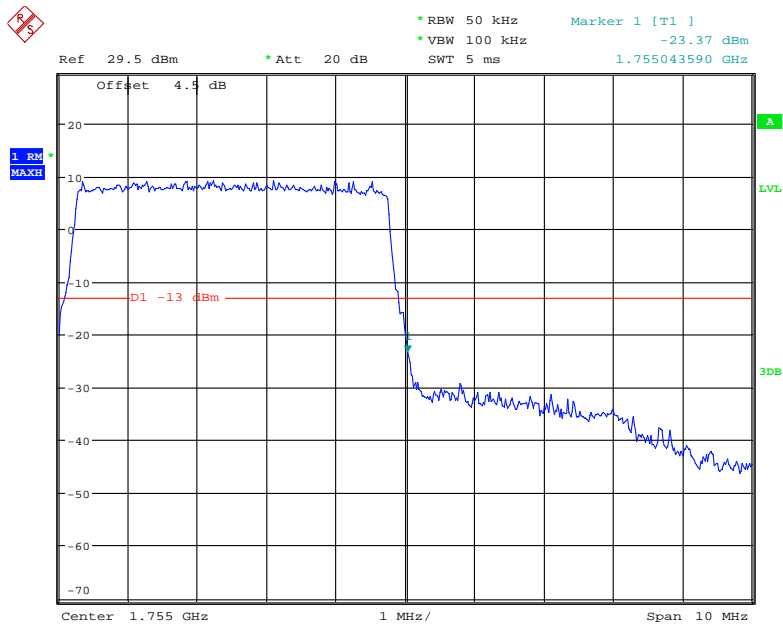


### 16-QAM (5.0 MHz, FULL RB) - Left Band Edge



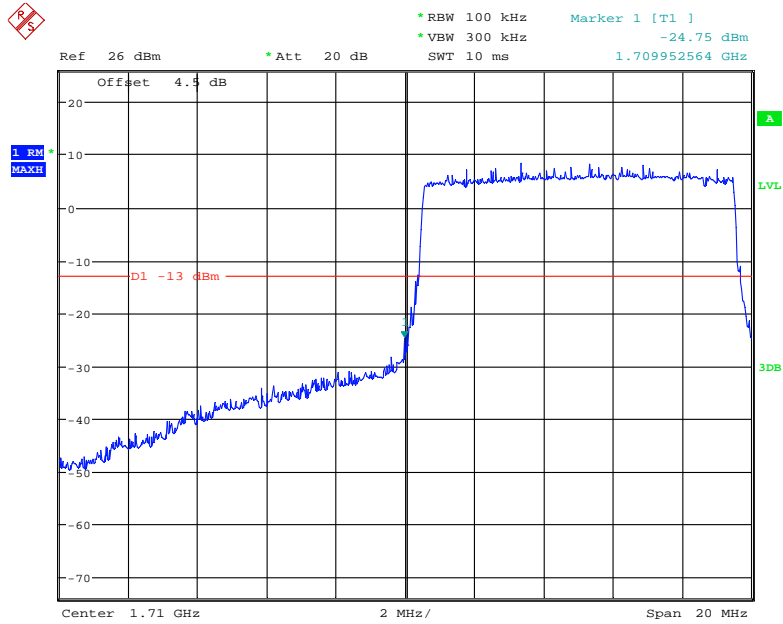
Date: 8.JAN.2018 10:36:32

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



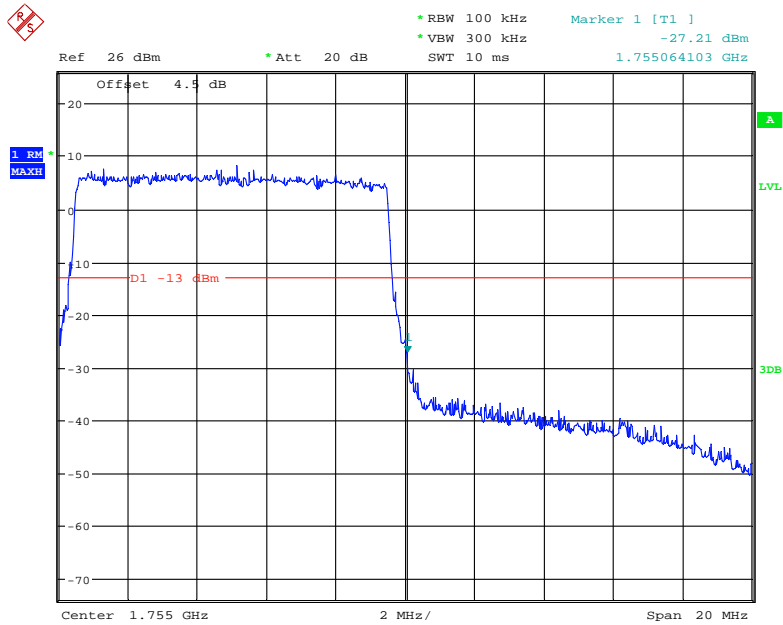
Date: 8.JAN.2018 10:40:15

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



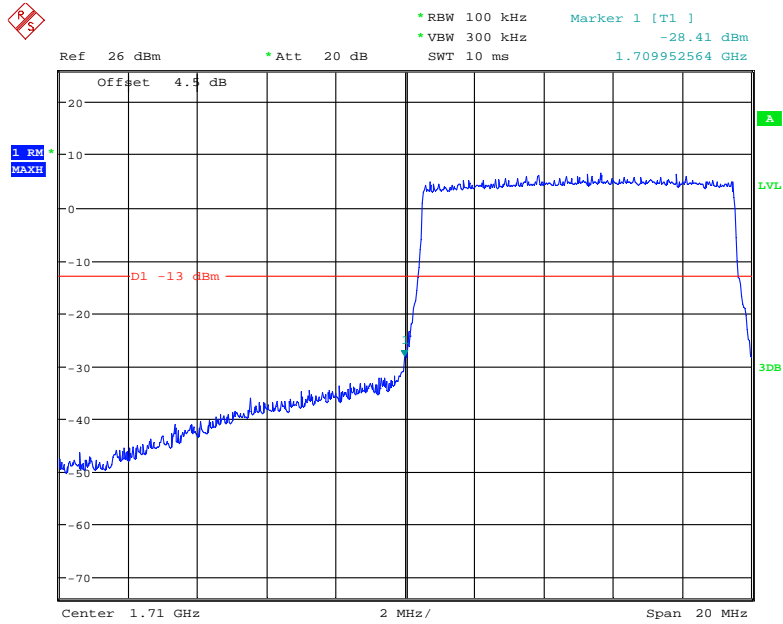
Date: 8.FEB.2018 14:56:04

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



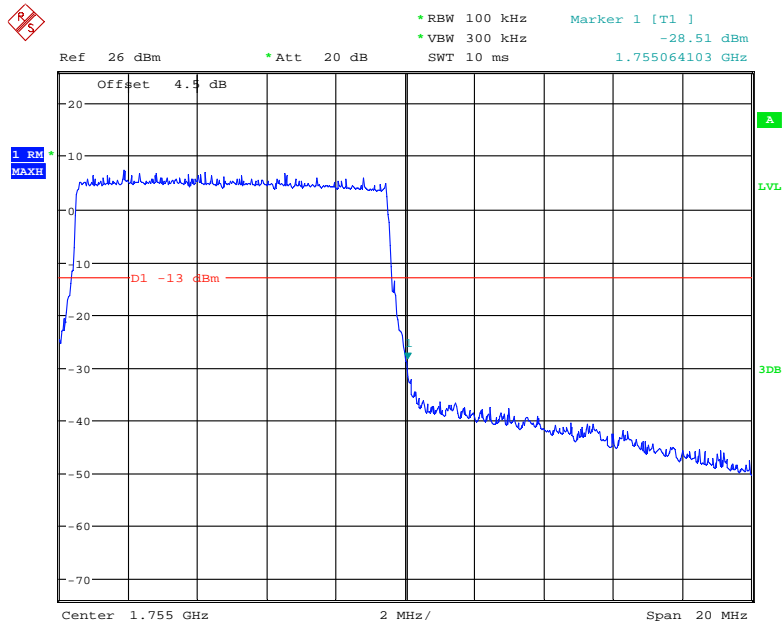
Date: 8.FEB.2018 14:58:12

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



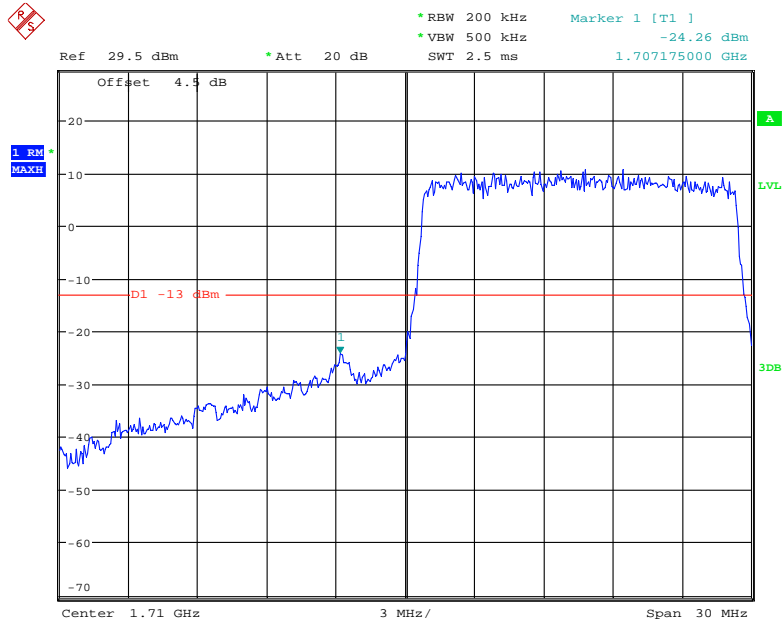
Date: 8.FEB.2018 14:56:46

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



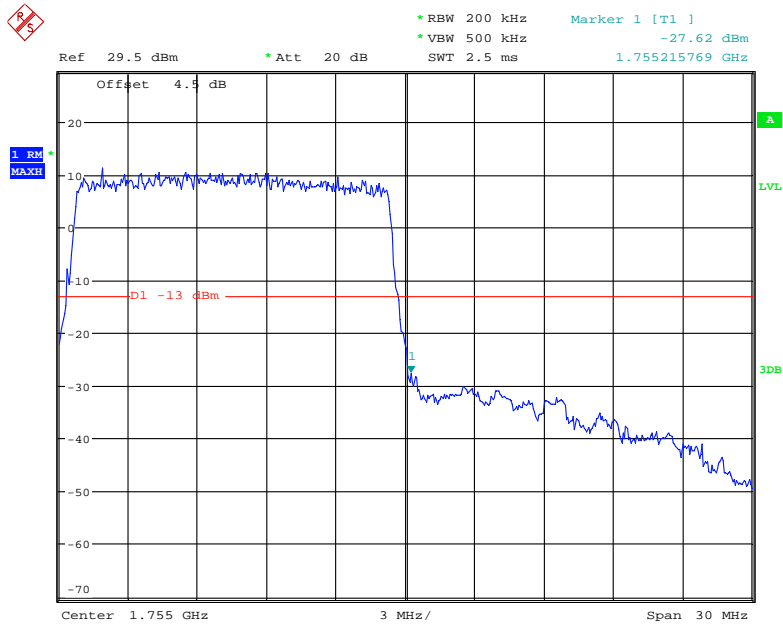
Date: 8.FEB.2018 14:57:30

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



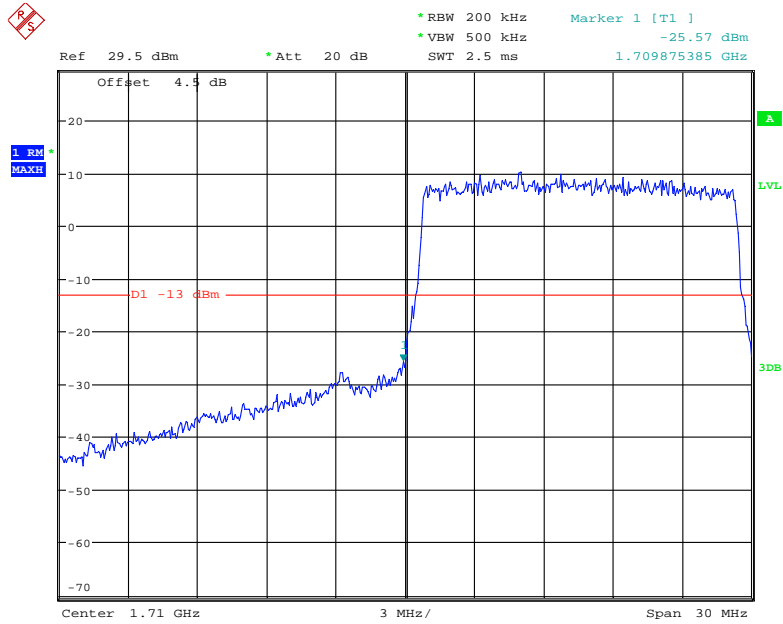
Date: 8.JAN.2018 10:28:32

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



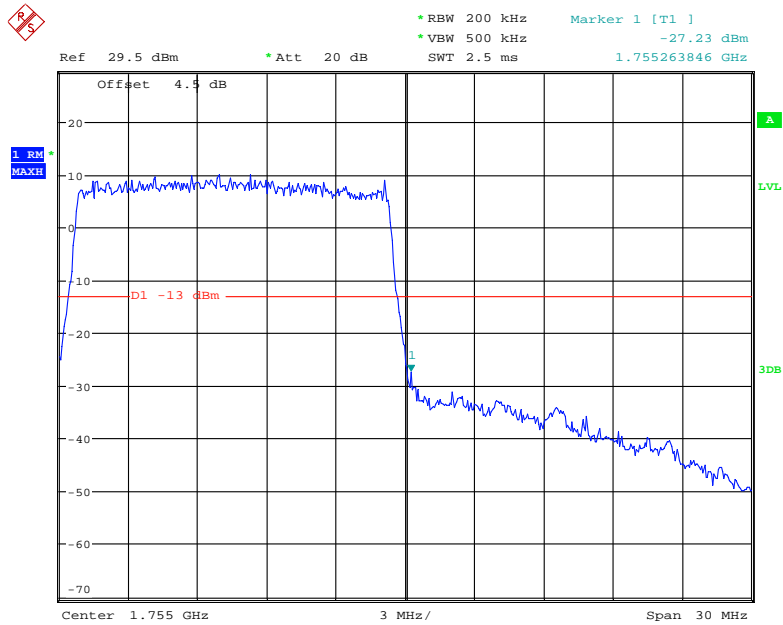
Date: 8.JAN.2018 10:29:58

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



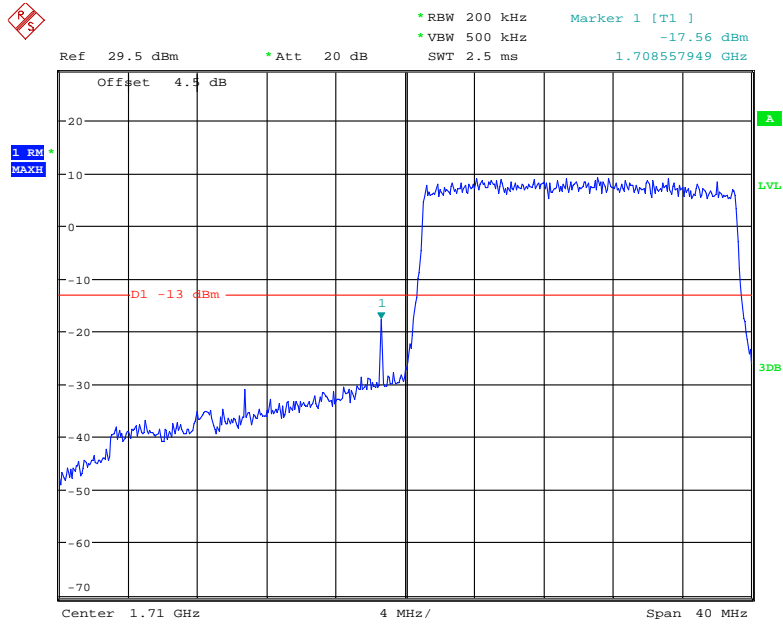
Date: 8.JAN.2018 10:27:04

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



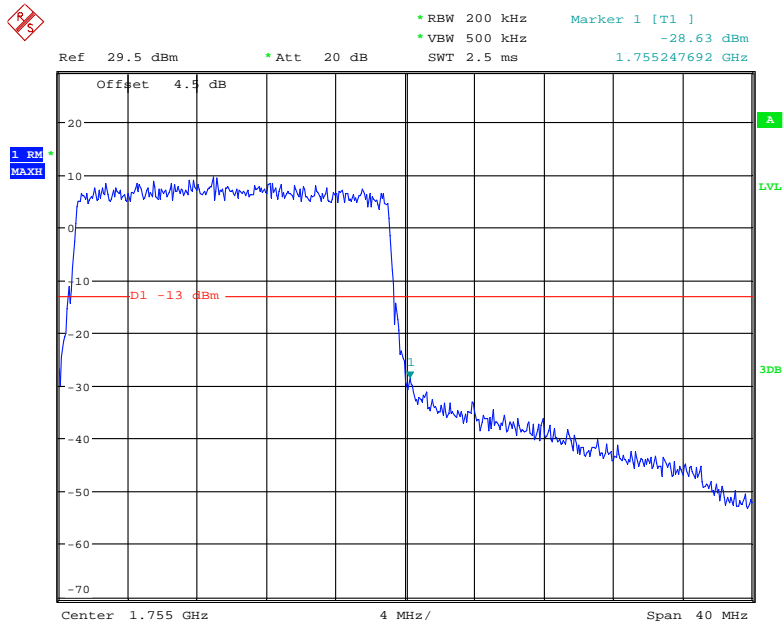
Date: 8.JAN.2018 10:30:46

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



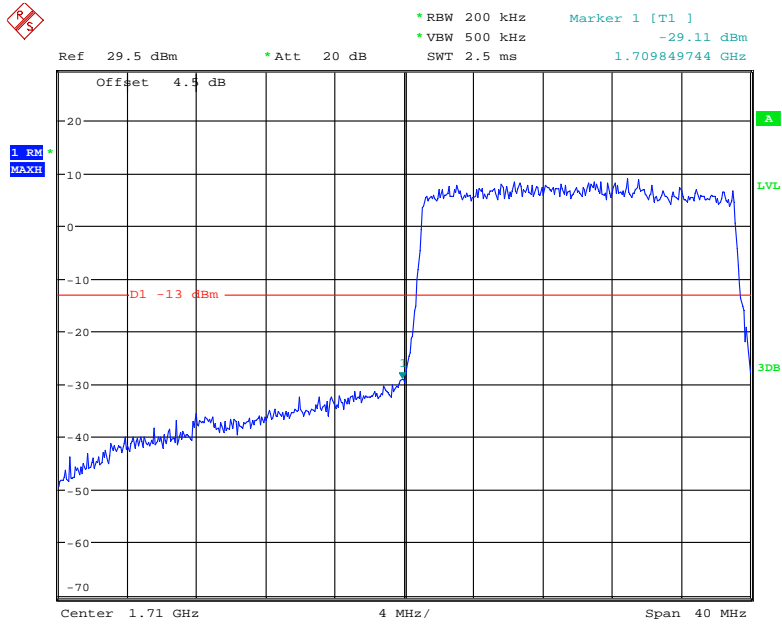
Date: 8.JAN.2018 10:23:10

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



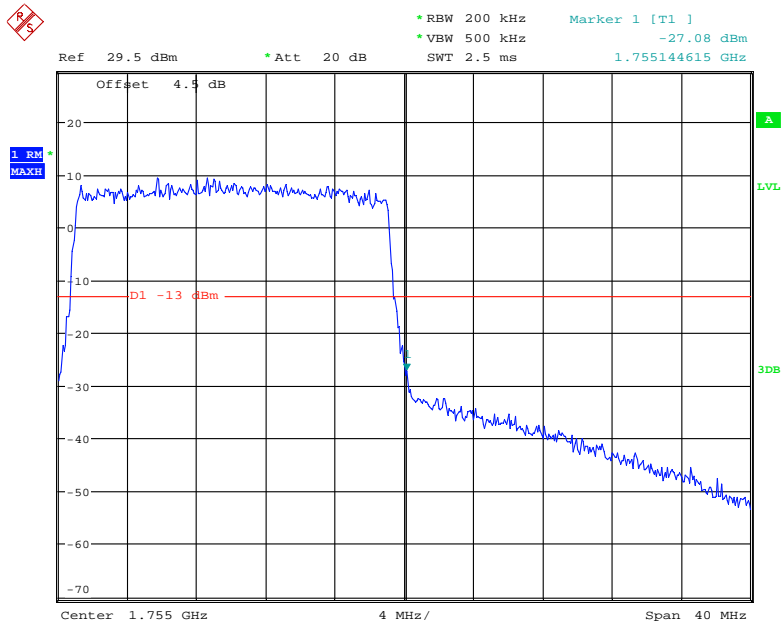
Date: 8.JAN.2018 10:20:16

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



Date: 8.JAN.2018 10:22:27

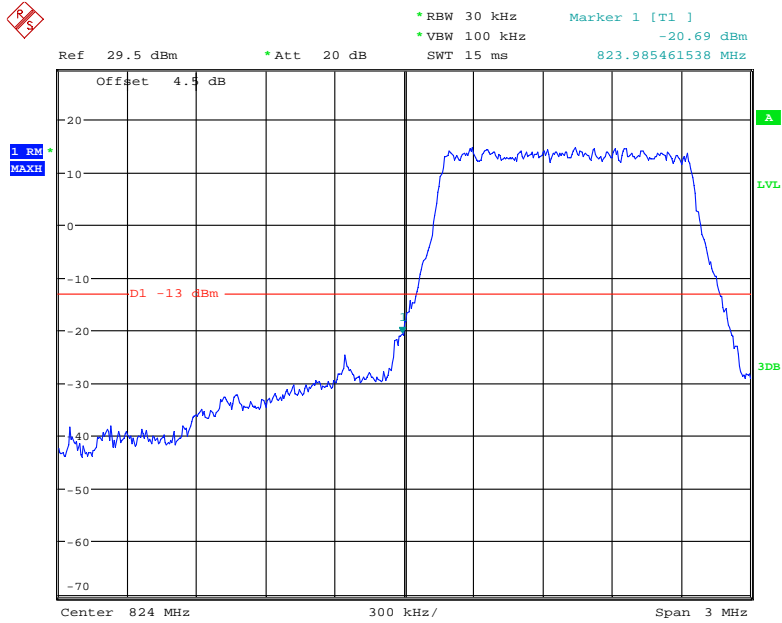
### 16-QAM (20.0 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 10:21:27

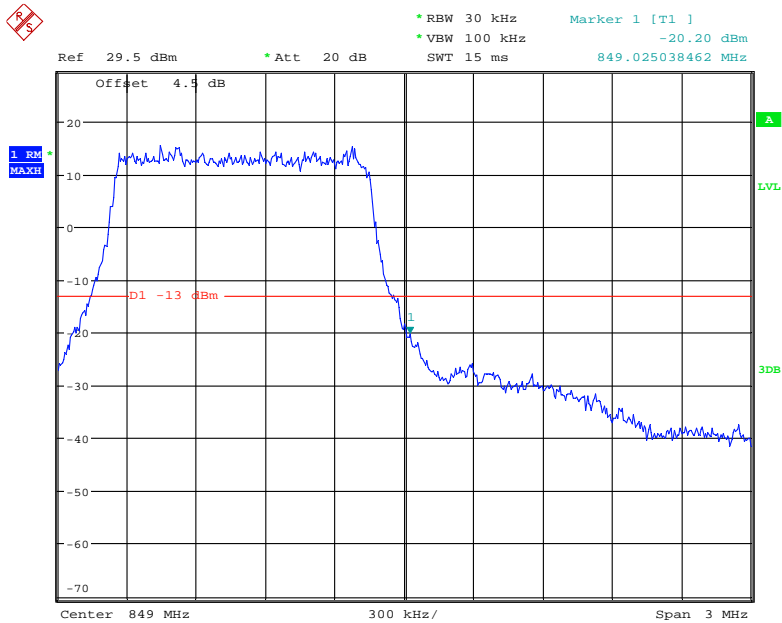
LTE Band 5:

QPSK (1.4 MHz, FULL RB) - Left Band Edge



Date: 8.JAN.2018 10:57:06

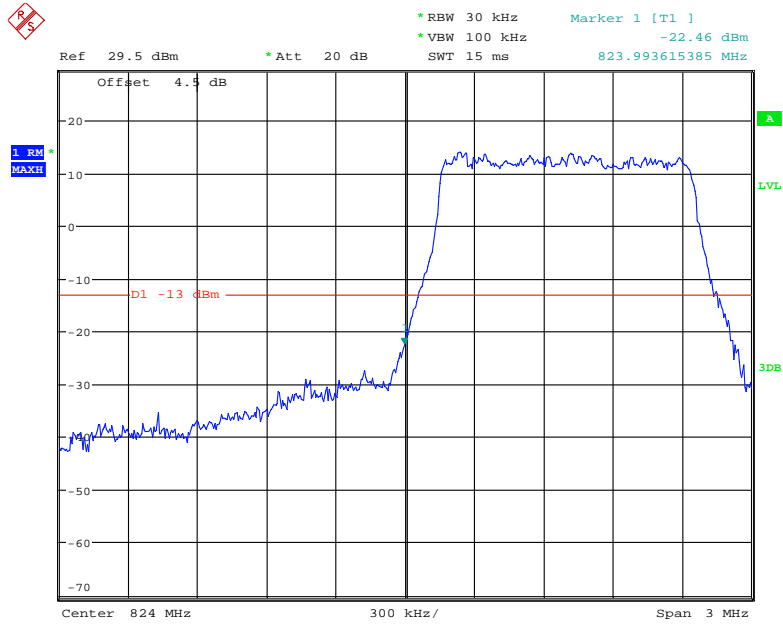
QPSK (1.4 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 10:59:20

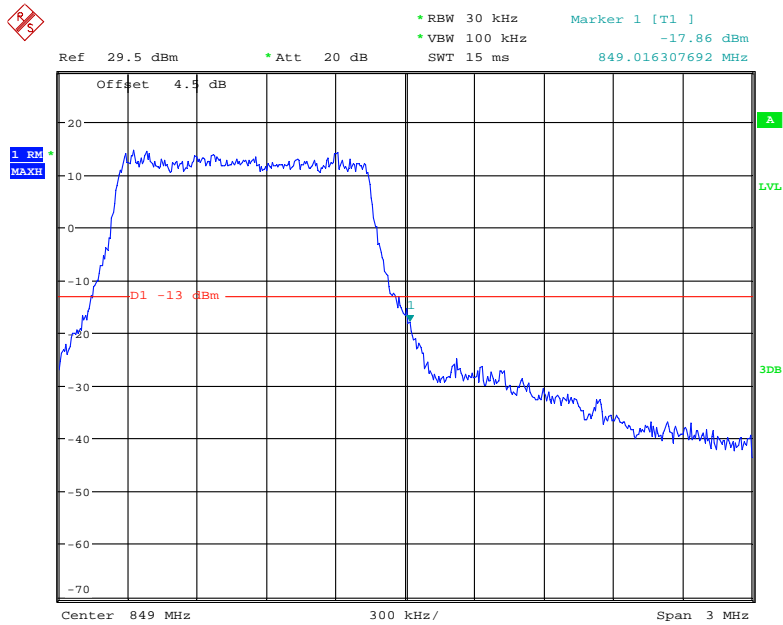


### 16-QAM (1.4 MHz, FULL RB) - Left Band Edge



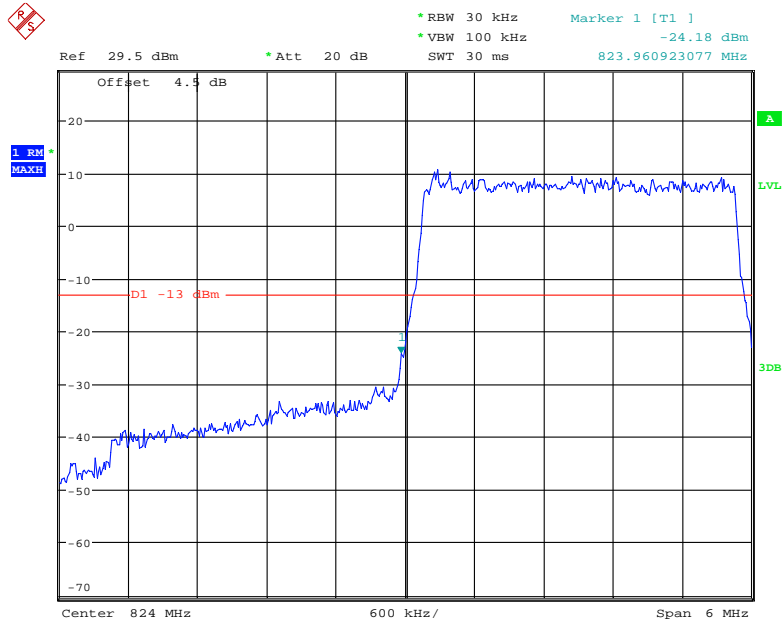
Date: 8.JAN.2018 10:57:51

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



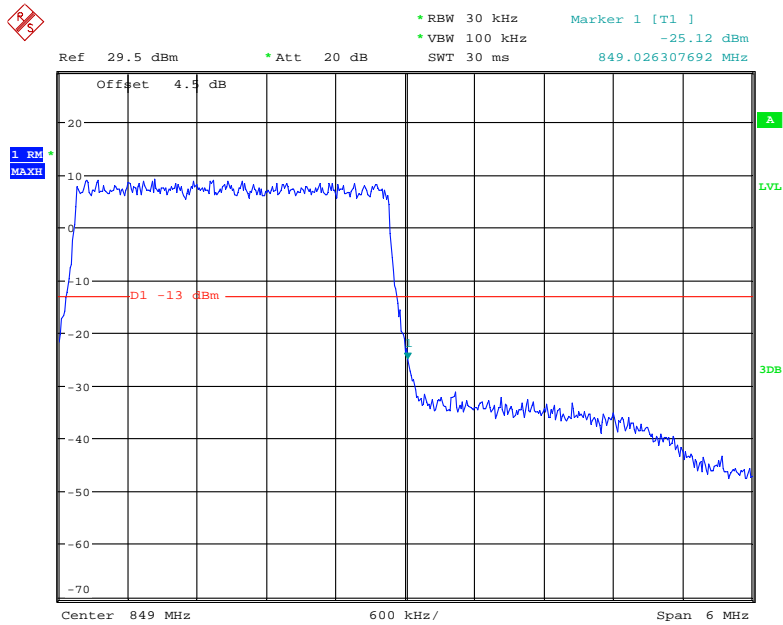
Date: 8.JAN.2018 10:58:53

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



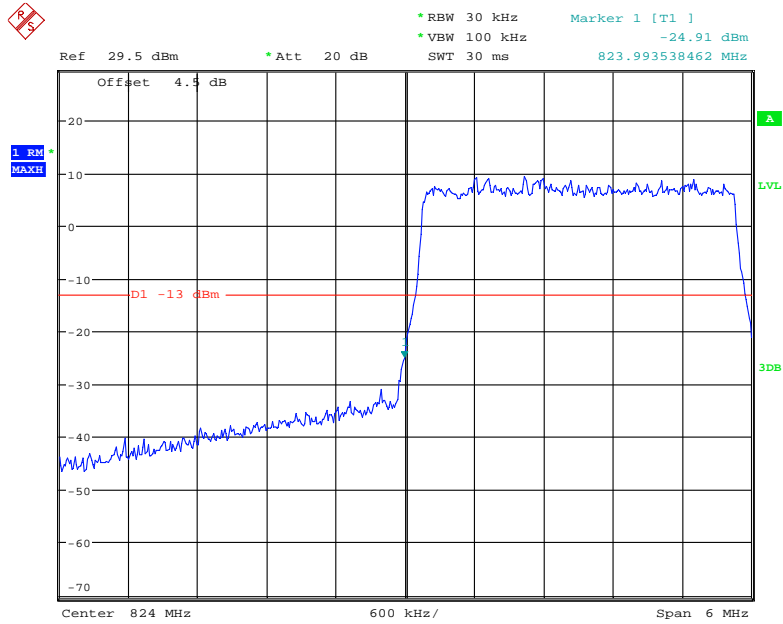
Date: 8.JAN.2018 11:05:51

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



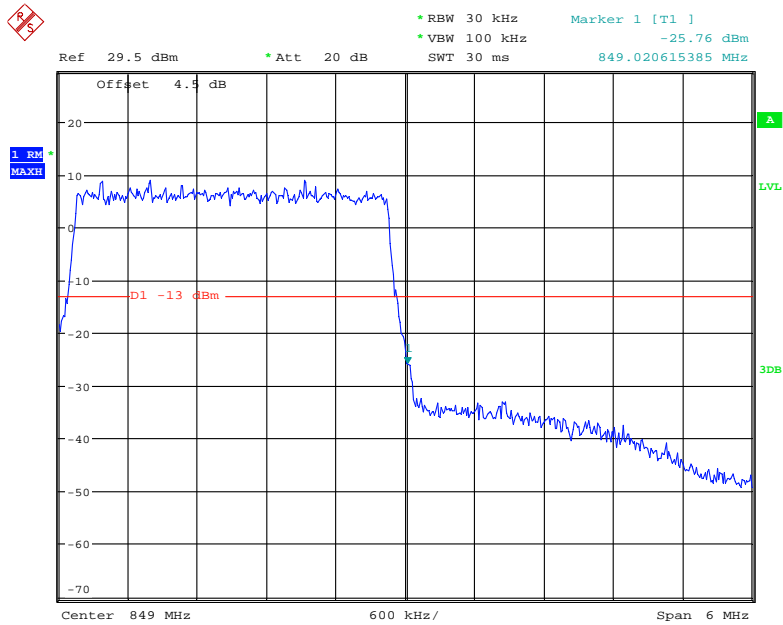
Date: 8.JAN.2018 11:02:58

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



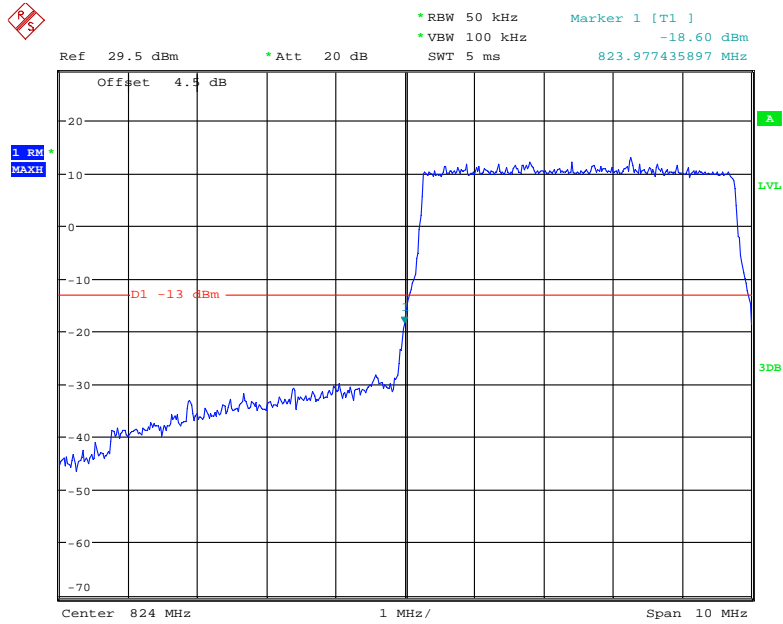
Date: 8.JAN.2018 11:05:21

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



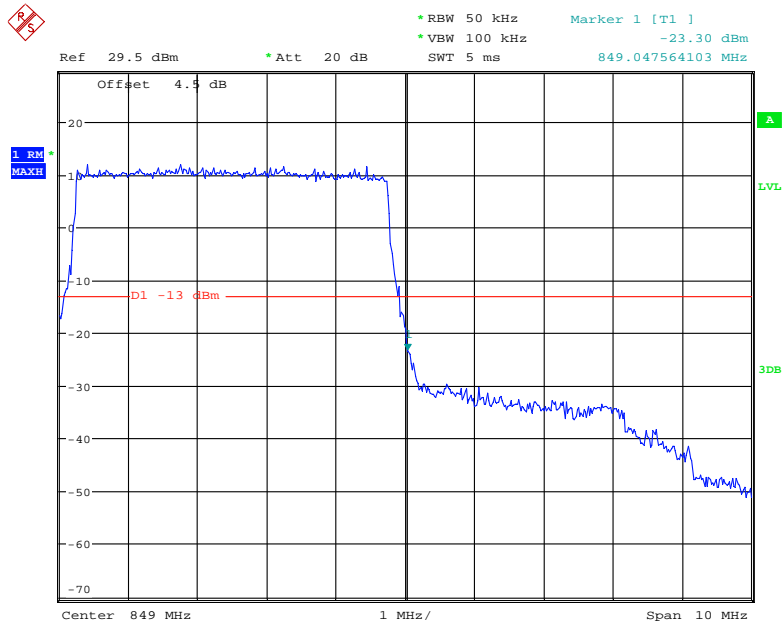
Date: 8.JAN.2018 11:04:12

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



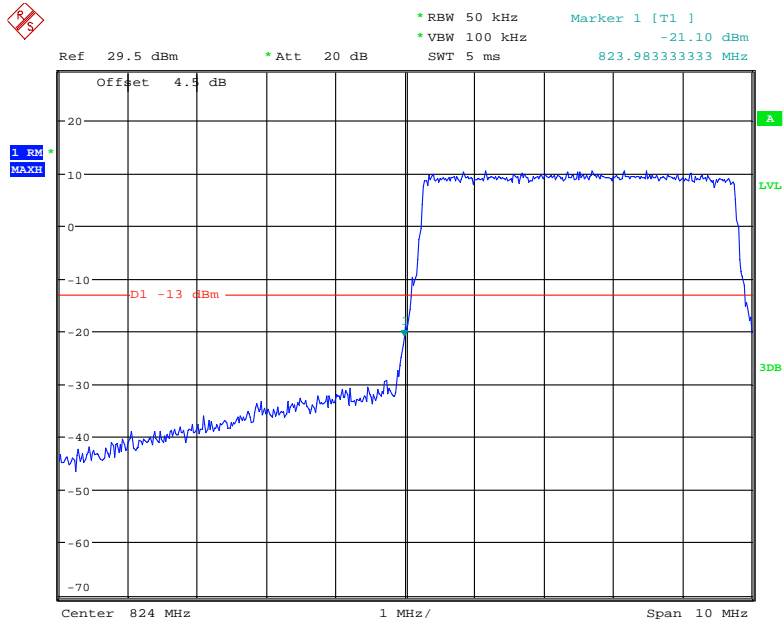
Date: 8.JAN.2018 11:08:36

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



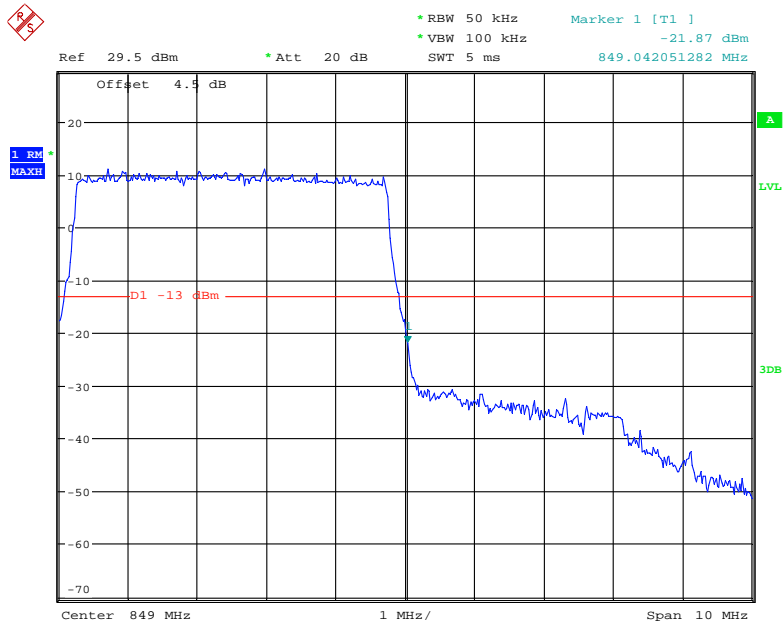
Date: 8.JAN.2018 11:09:26

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



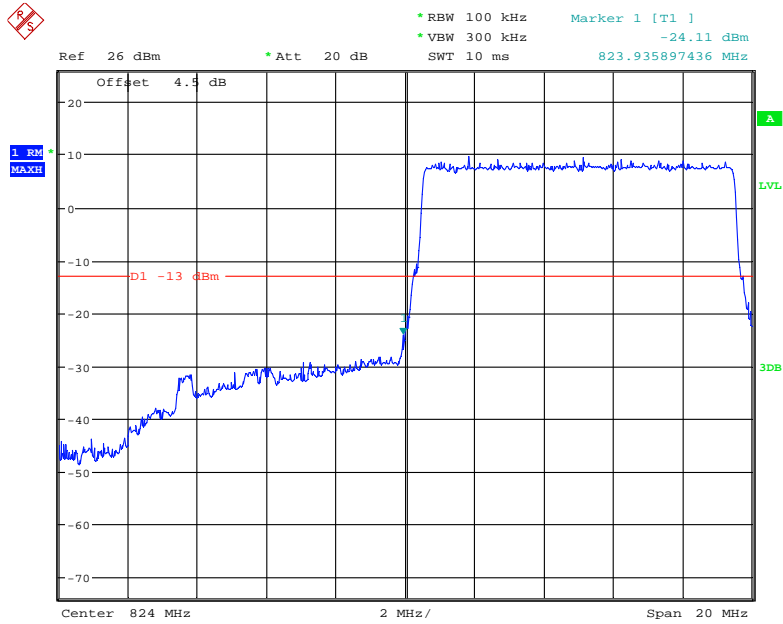
Date: 8.JAN.2018 11:07:56

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



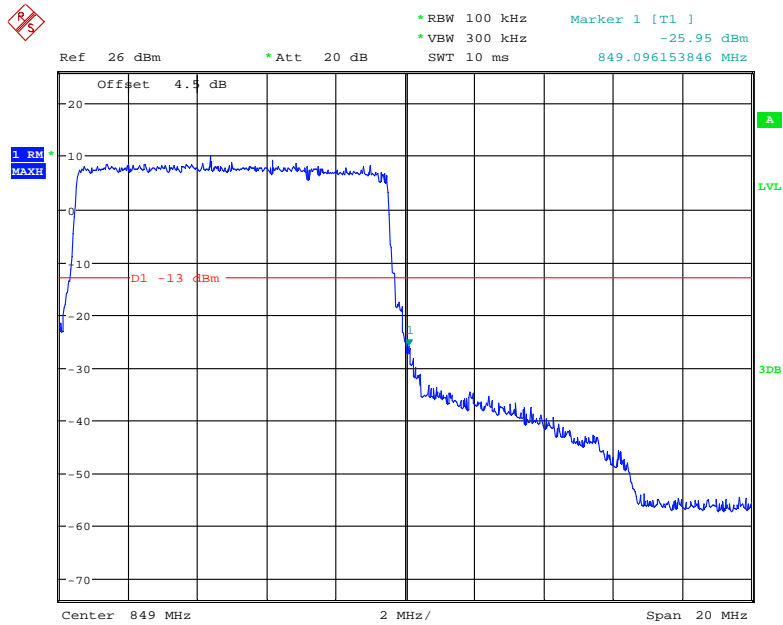
Date: 8.JAN.2018 11:10:03

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



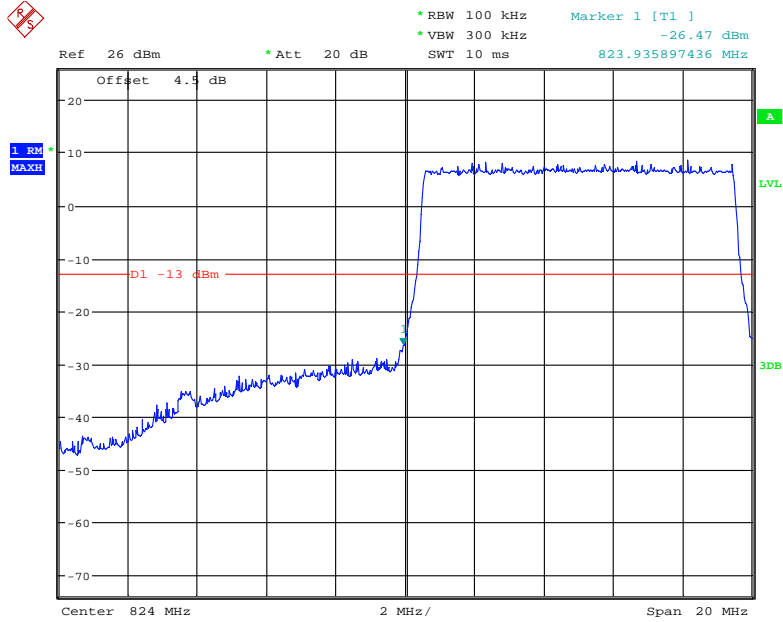
Date: 8.FEB.2018 15:00:59

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



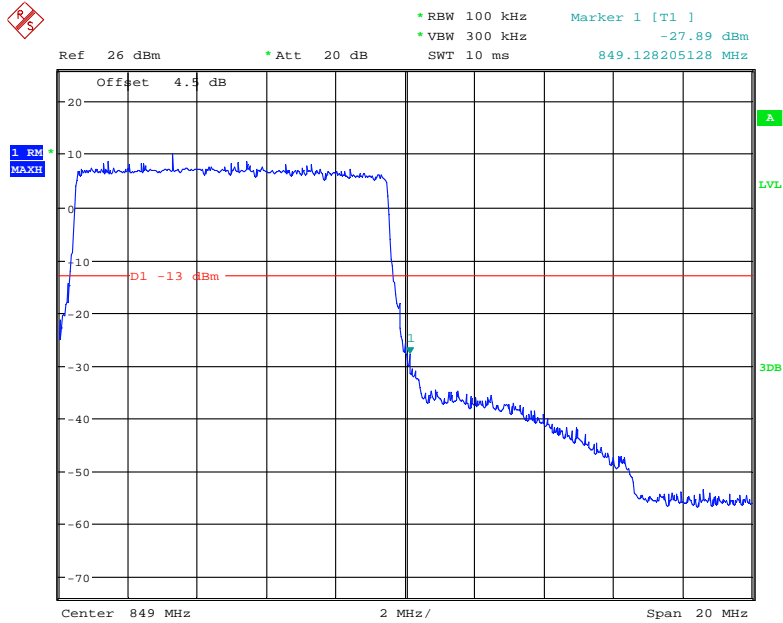
Date: 8.FEB.2018 15:03:12

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



Date: 8.FEB.2018 15:01:35

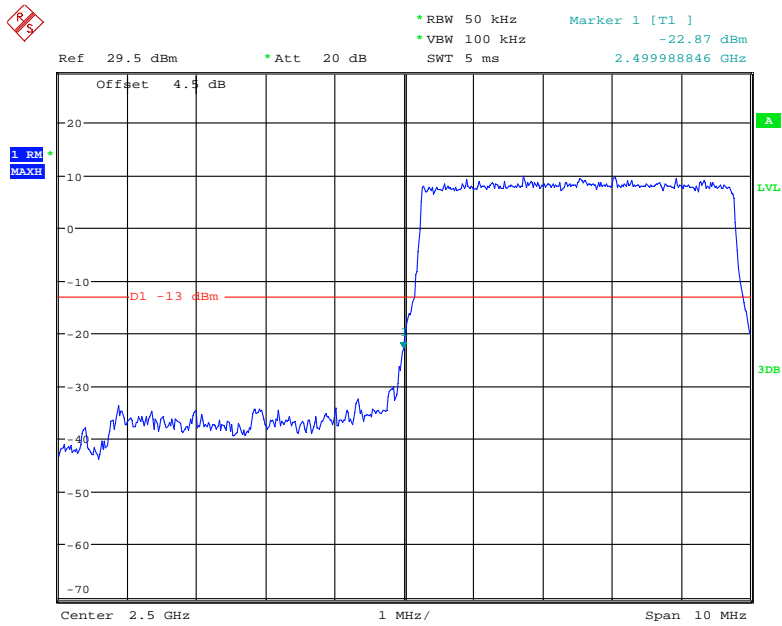
### 16-QAM (10.0 MHz, FULL RB) - Right Band Edge



Date: 8.FEB.2018 15:02:43

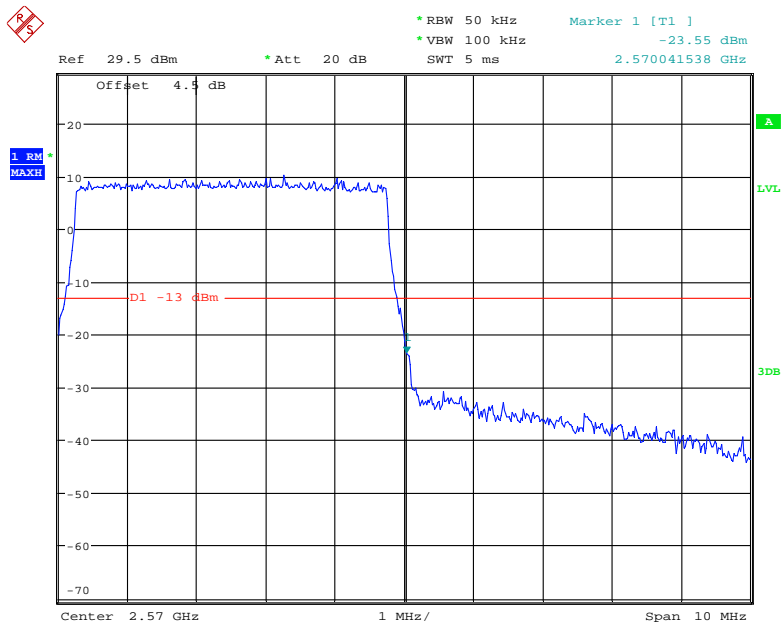
LTE Band 7:

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



Date: 8.JAN.2018 11:16:47

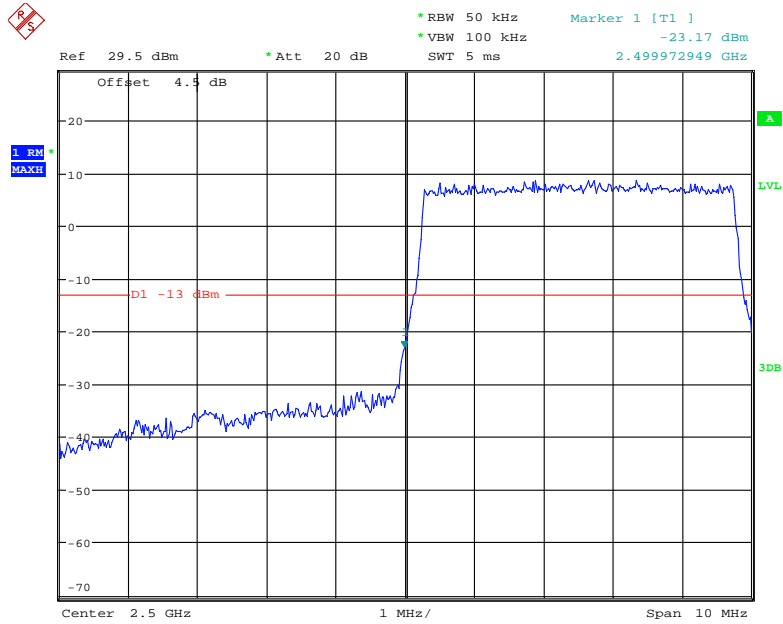
QPSK (5.0 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 11:18:25

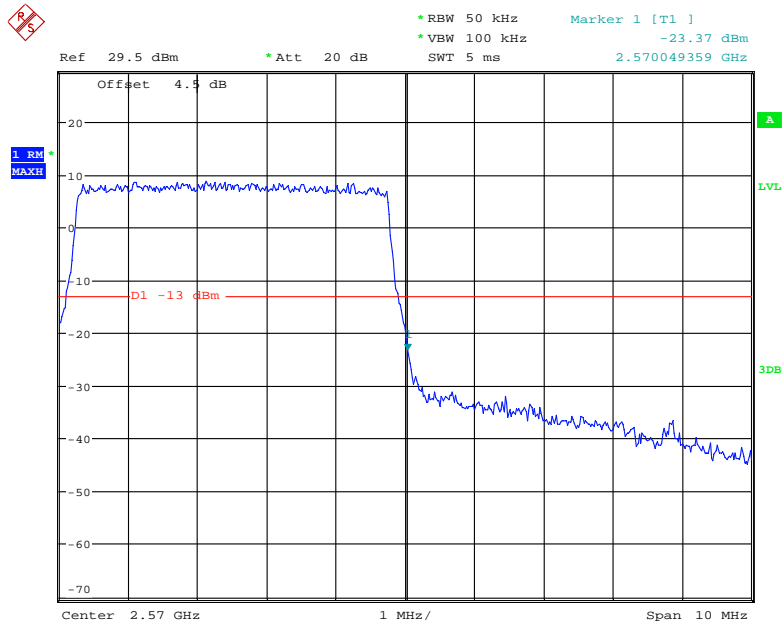


### 16-QAM (5.0 MHz, FULL RB) - Left Band Edge



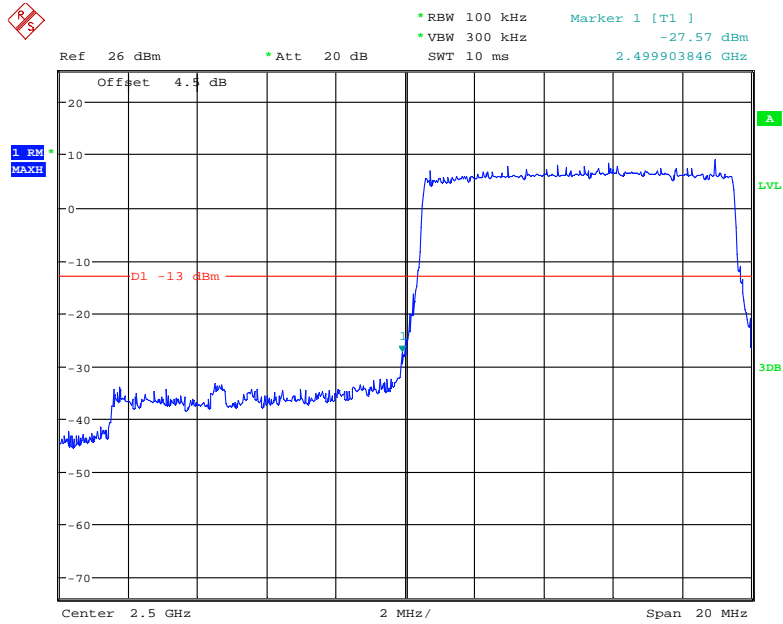
Date: 8.JAN.2018 11:15:43

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



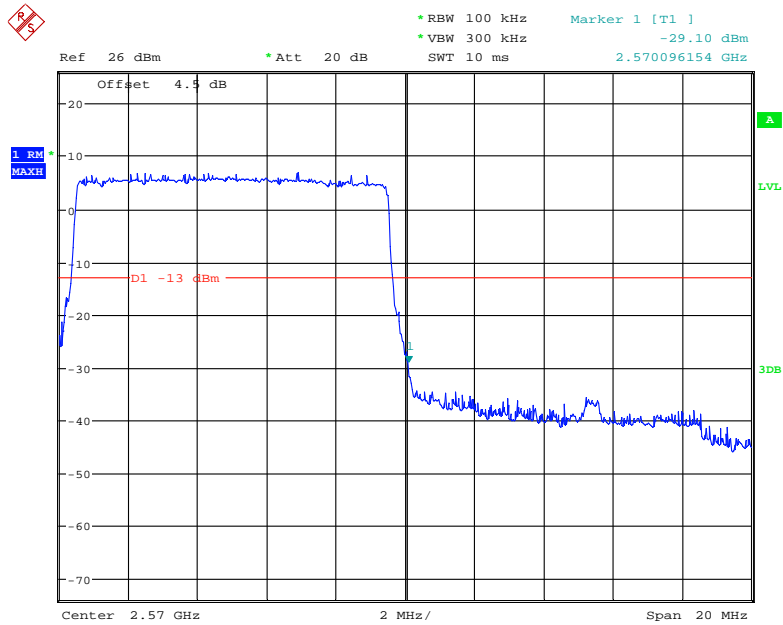
Date: 8.JAN.2018 11:19:31

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



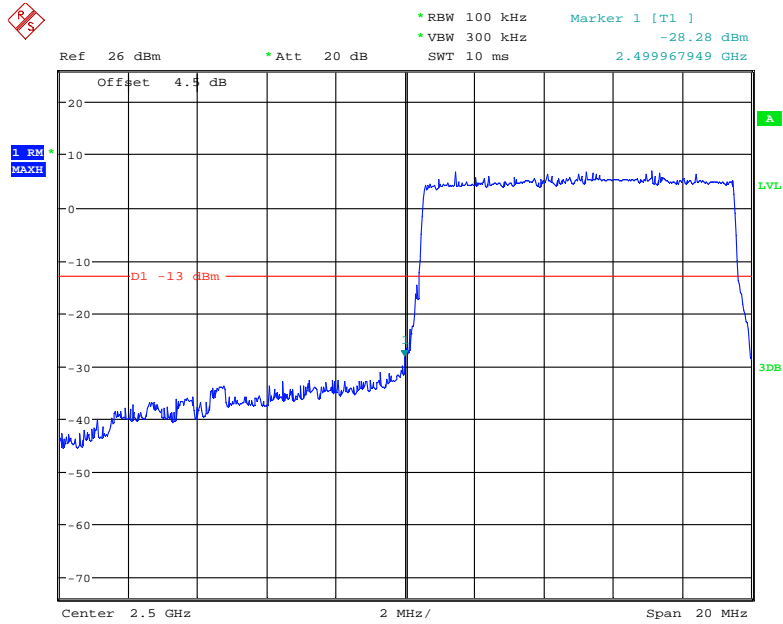
Date: 8.FEB.2018 15:04:34

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



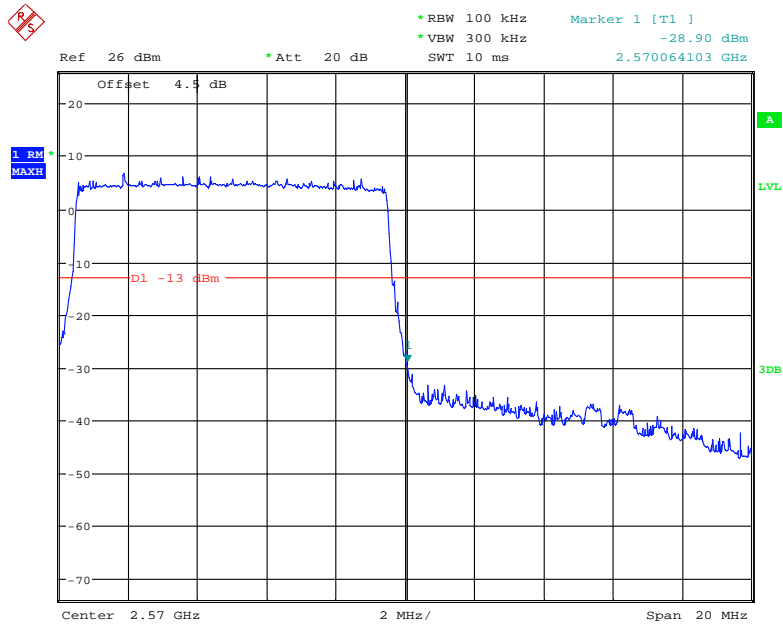
Date: 8.FEB.2018 15:07:11

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



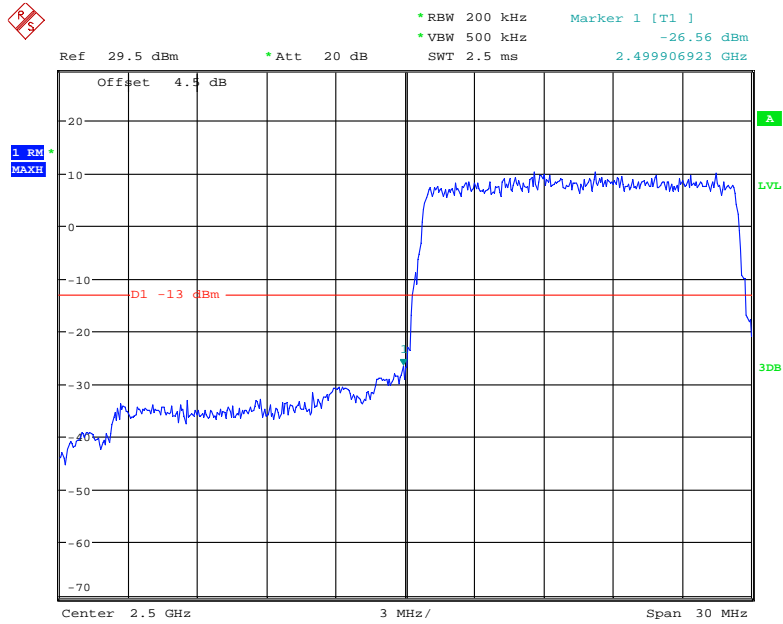
Date: 8.FEB.2018 15:05:07

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



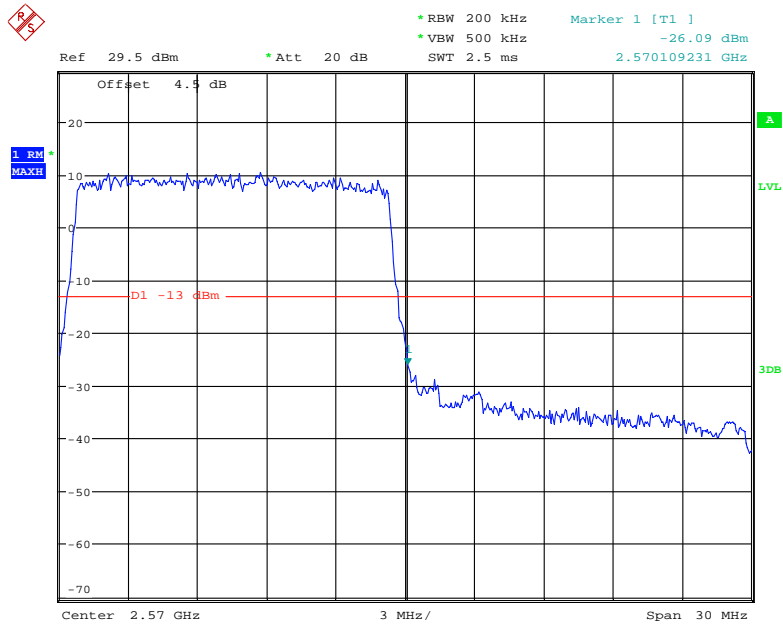
Date: 8.FEB.2018 15:06:44

### QPSK (15 MHz, FULL RB) - Left Band Edge



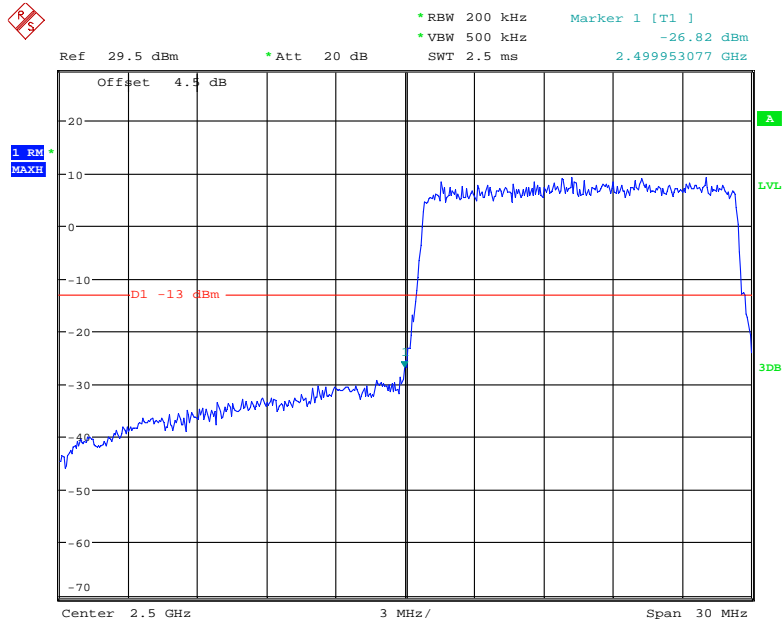
Date: 8.JAN.2018 11:35:48

### QPSK (15 MHz, FULL RB) - Right Band Edge



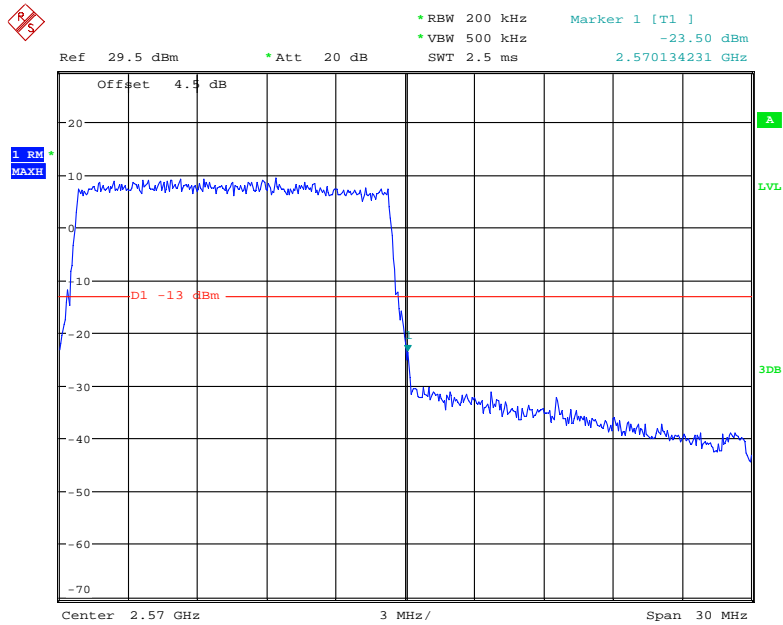
Date: 8.JAN.2018 11:36:50

### 16-QAM (15 MHz, FULL RB) - Left Band Edge



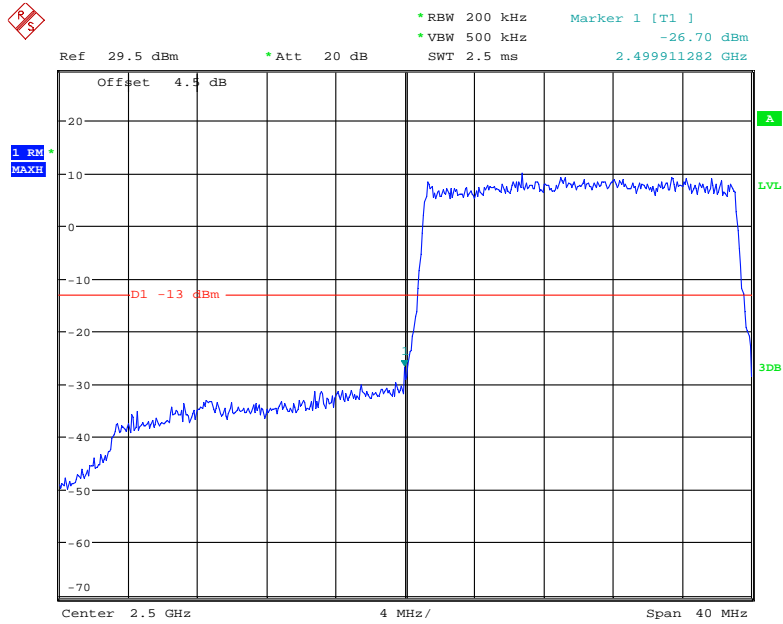
Date: 8.JAN.2018 11:35:01

### 16-QAM (15 MHz, FULL RB) - Right Band Edge



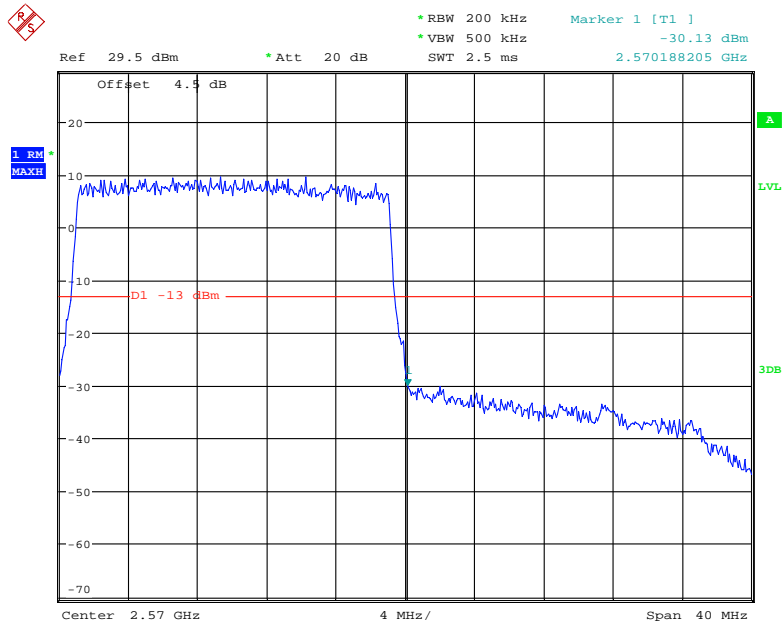
Date: 8.JAN.2018 11:37:32

### QPSK (20 MHz, FULL RB) - Left Band Edge



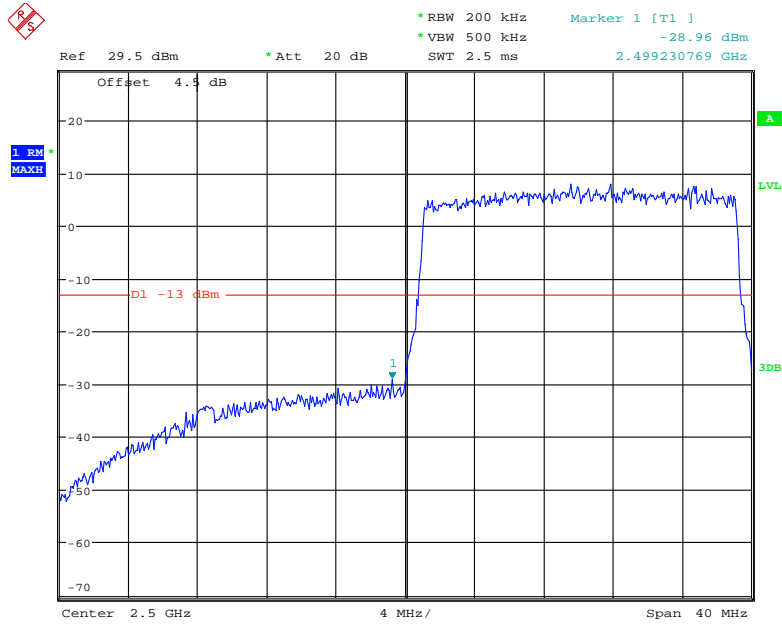
Date: 8.JAN.2018 11:42:19

### QPSK (20 MHz, FULL RB) - Right Band Edge



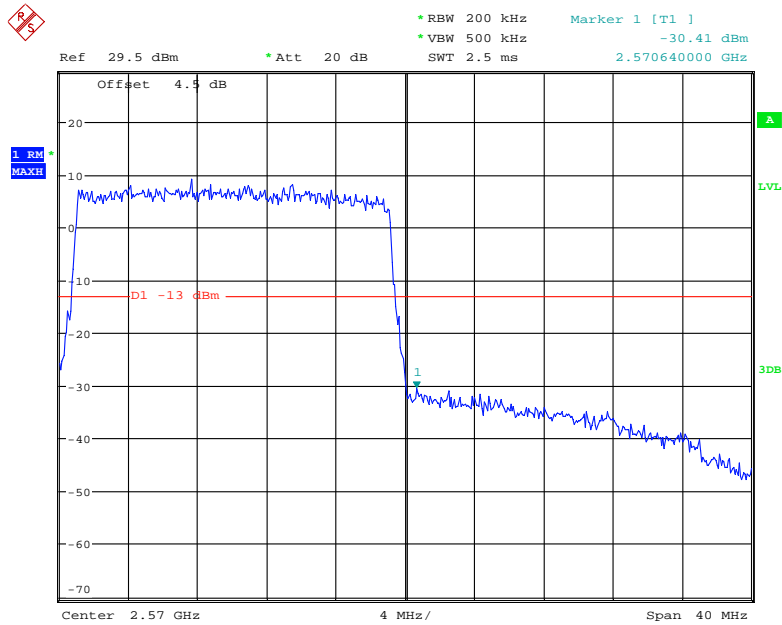
Date: 8.JAN.2018 11:39:09

### 16-QAM (20 MHz, FULL RB) - Left Band Edge



Date: 8.JAN.2018 11:40:55

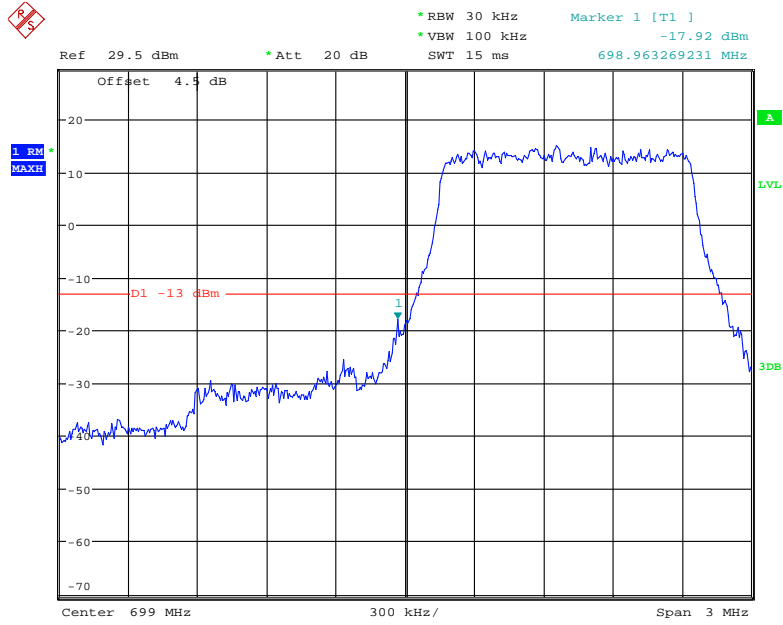
### 16-QAM (20 MHz, FULL RB) - Right Band Edge



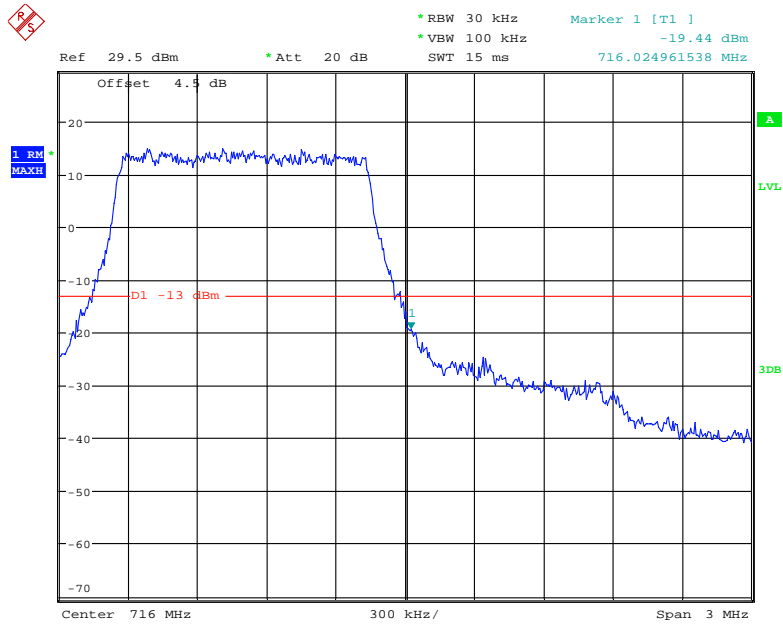
Date: 8.JAN.2018 11:39:57

LTE Band 12:

QPSK (1.4 MHz, FULL RB) - Left Band Edge

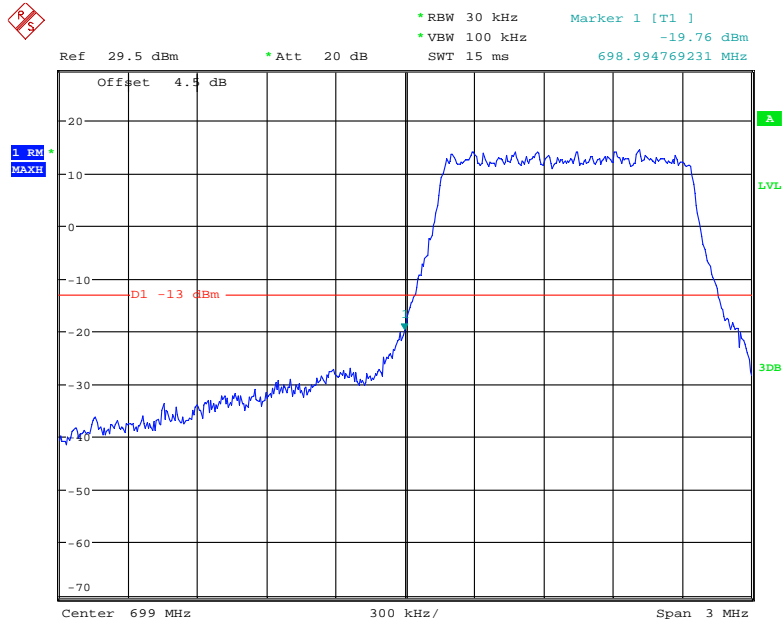


QPSK (1.4 MHz, FULL RB) - Right Band Edge



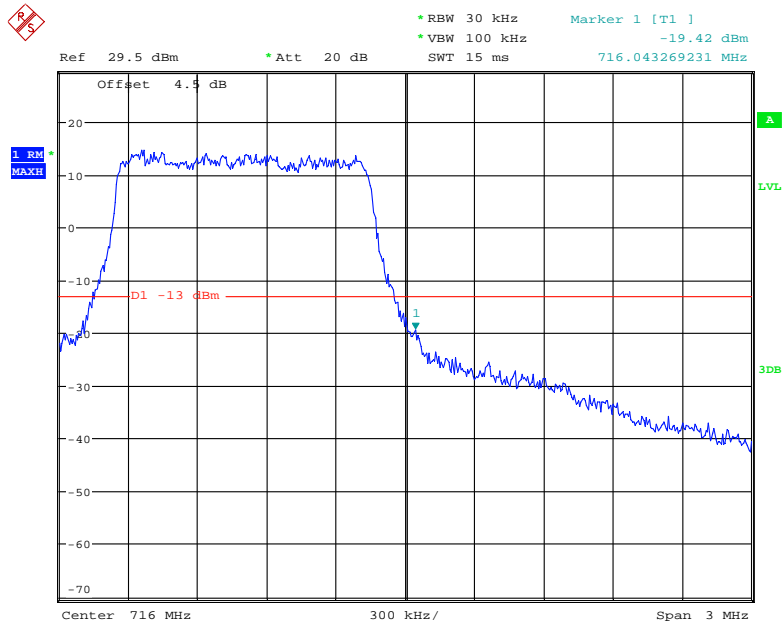


### 16-QAM (1.4 MHz, FULL RB) - Left Band Edge



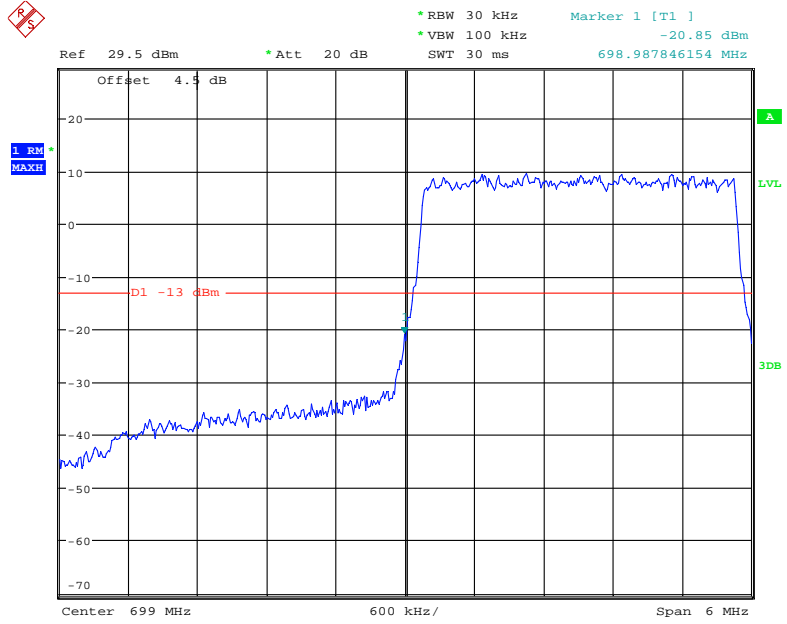
Date: 8.JAN.2018 11:54:27

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



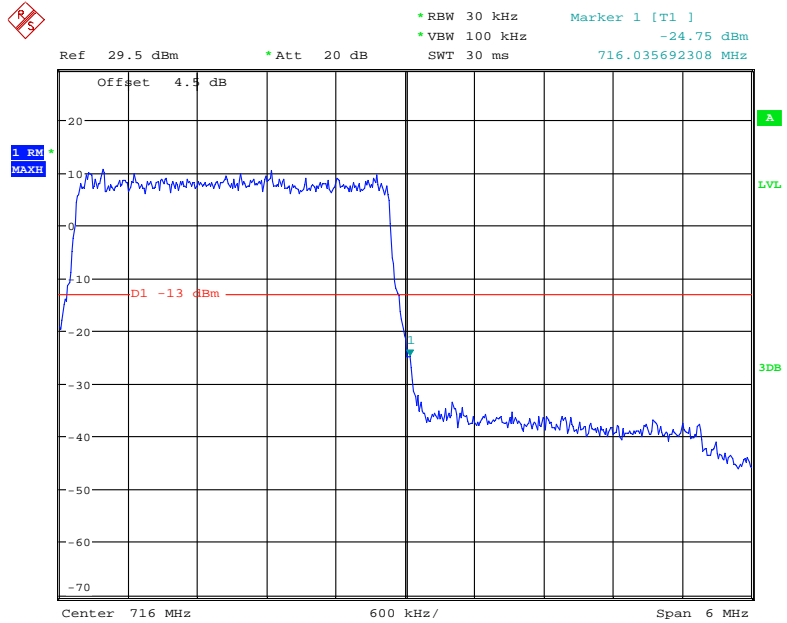
Date: 8.JAN.2018 11:55:26

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



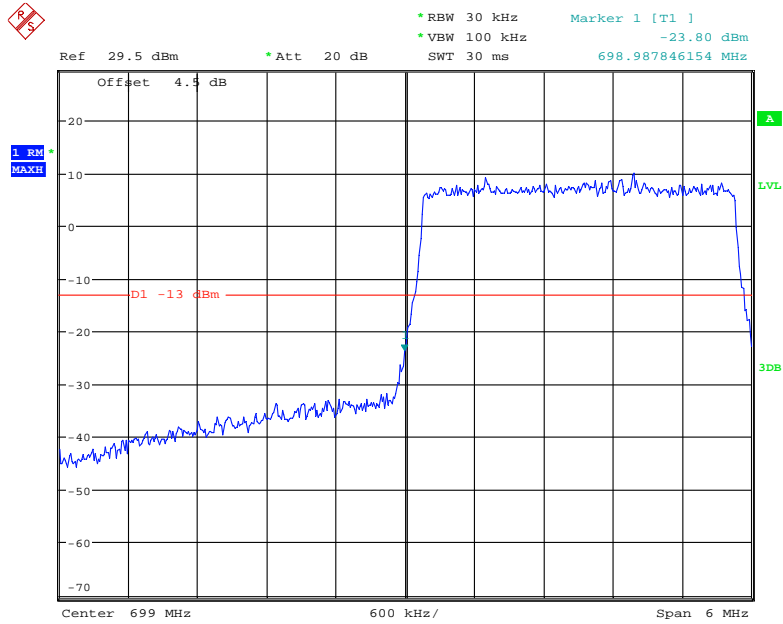
Date: 8.JAN.2018 13:06:03

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



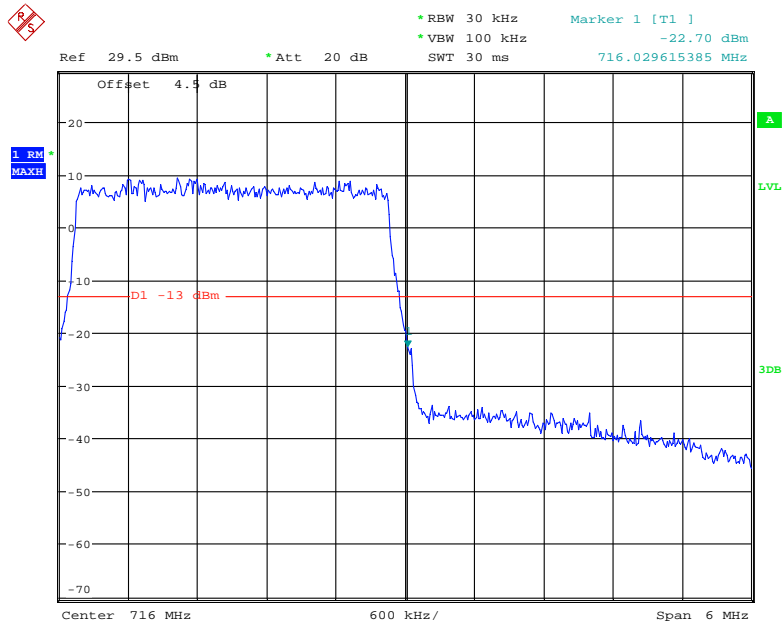
Date: 8.JAN.2018 13:03:02

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



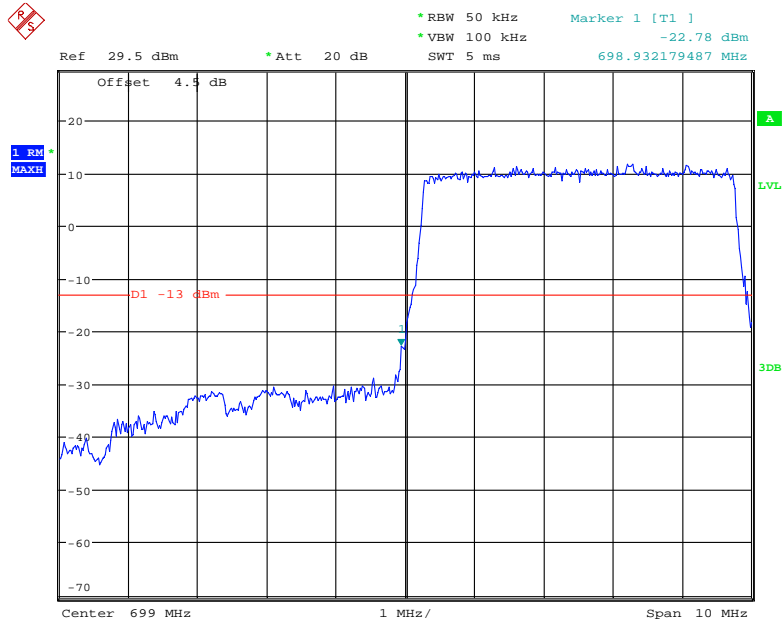
Date: 8.JAN.2018 13:05:01

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



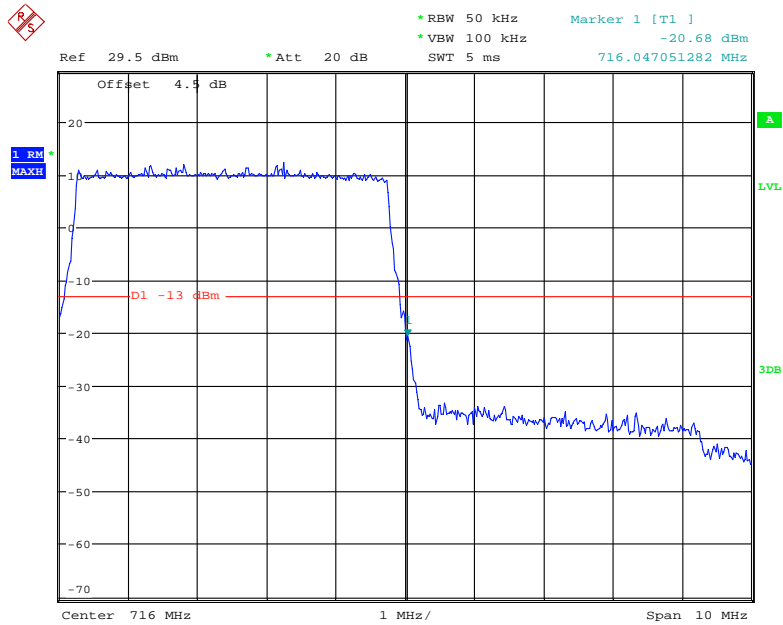
Date: 8.JAN.2018 13:04:09

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



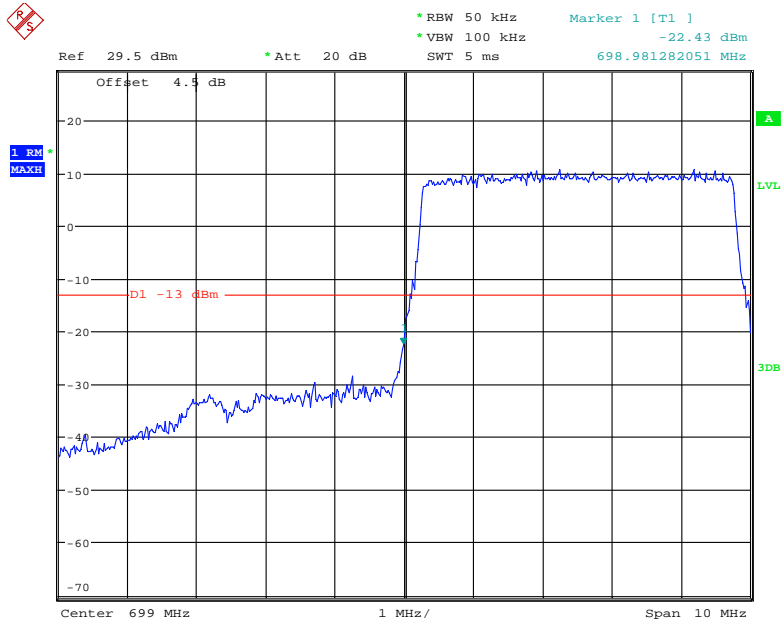
Date: 8.JAN.2018 13:09:37

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



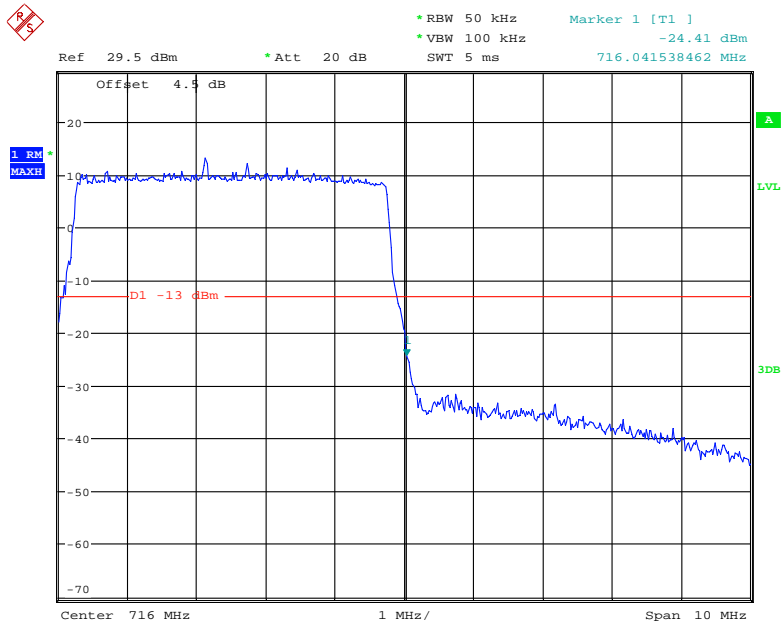
Date: 8.JAN.2018 13:10:21

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



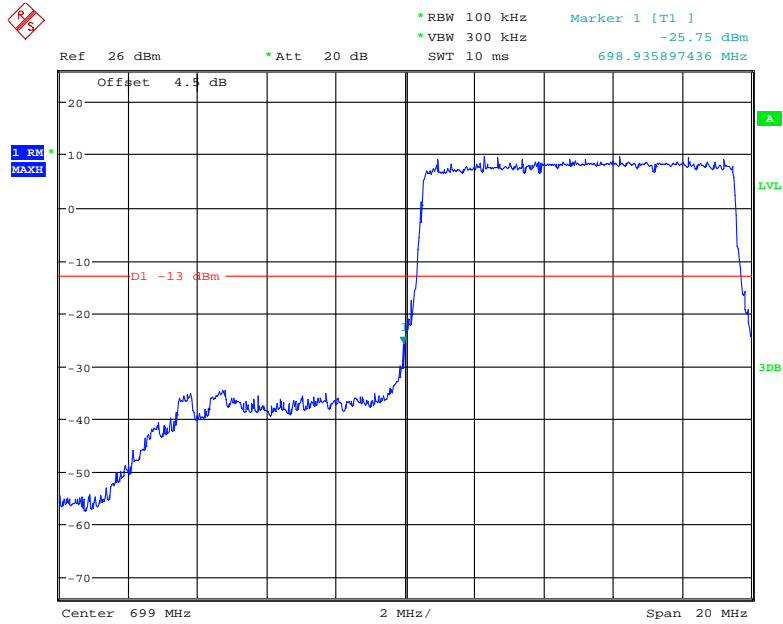
Date: 8.JAN.2018 13:08:53

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



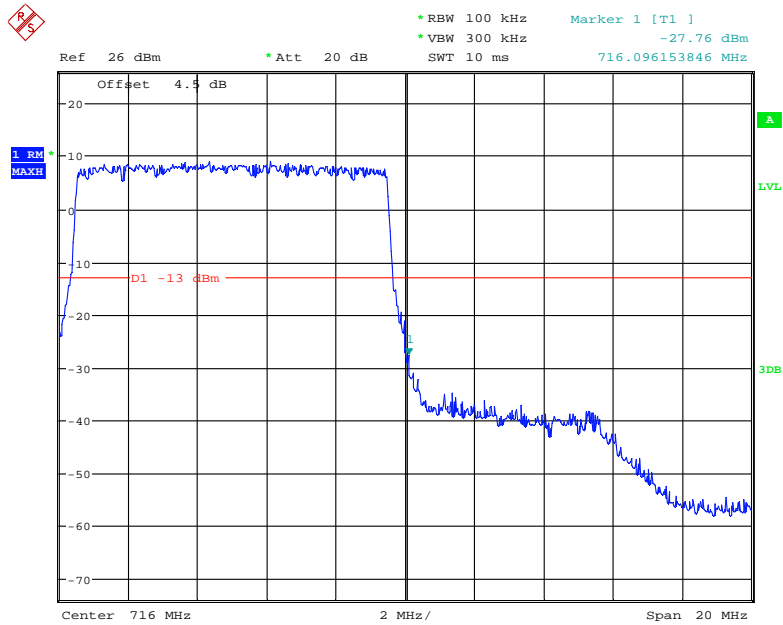
Date: 8.JAN.2018 13:11:00

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



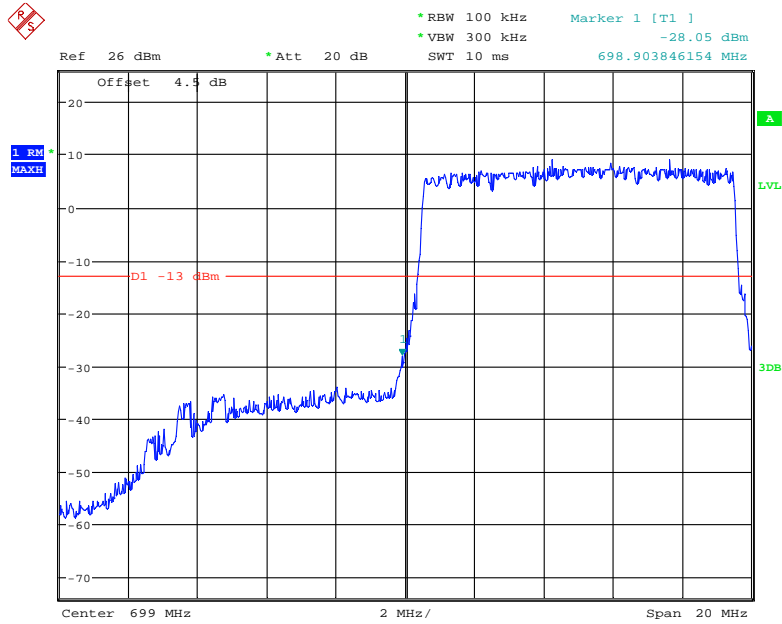
Date: 8.FEB.2018 15:08:37

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



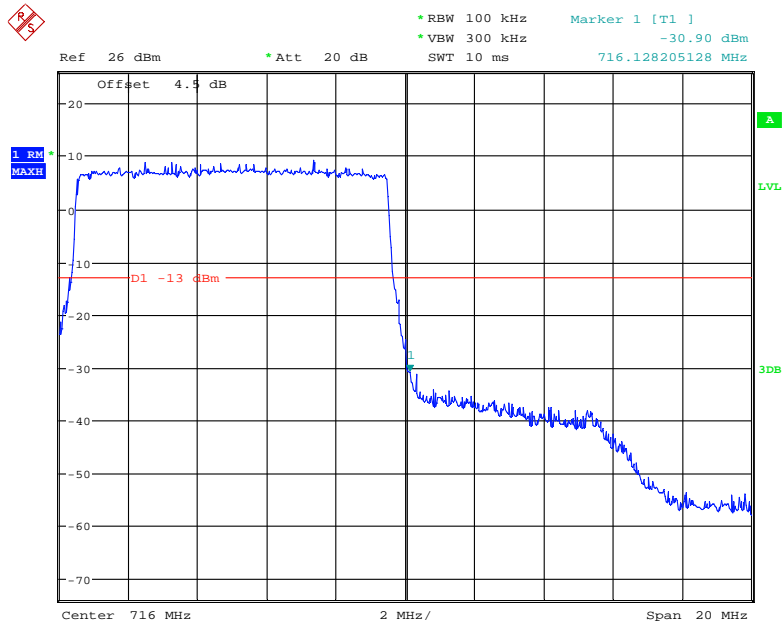
Date: 8.FEB.2018 15:09:57

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



Date: 8.FEB.2018 15:08:59

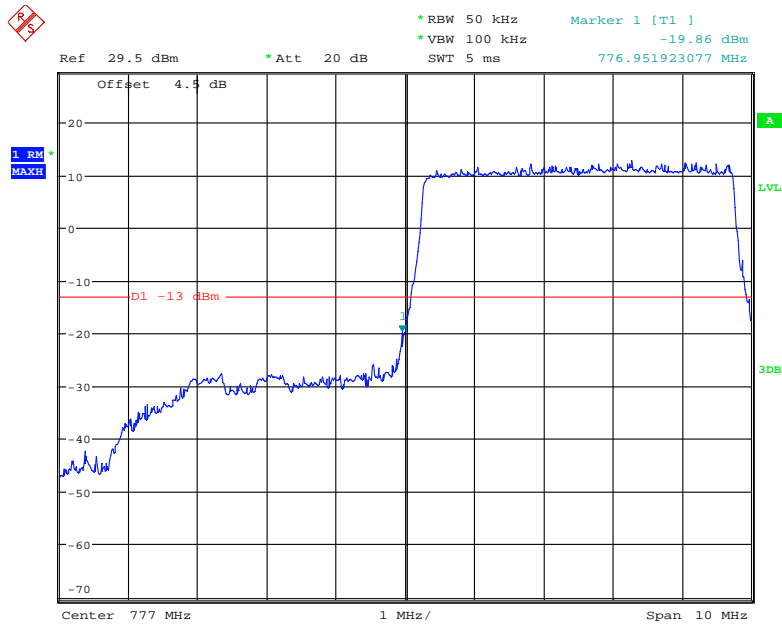
### 16-QAM (10.0 MHz, FULL RB) - Right Band Edge



Date: 8.FEB.2018 15:09:39

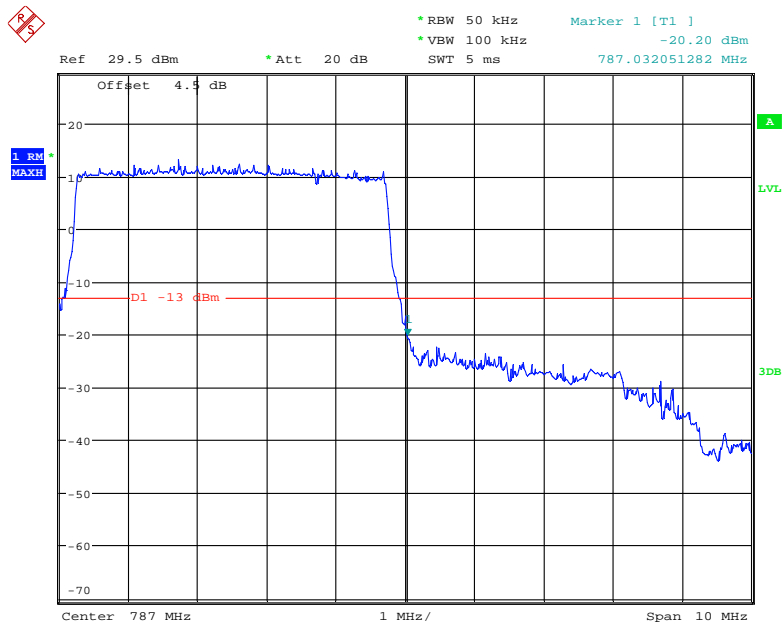
LTE Band 13:

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



Date: 8.JAN.2018 13:49:03

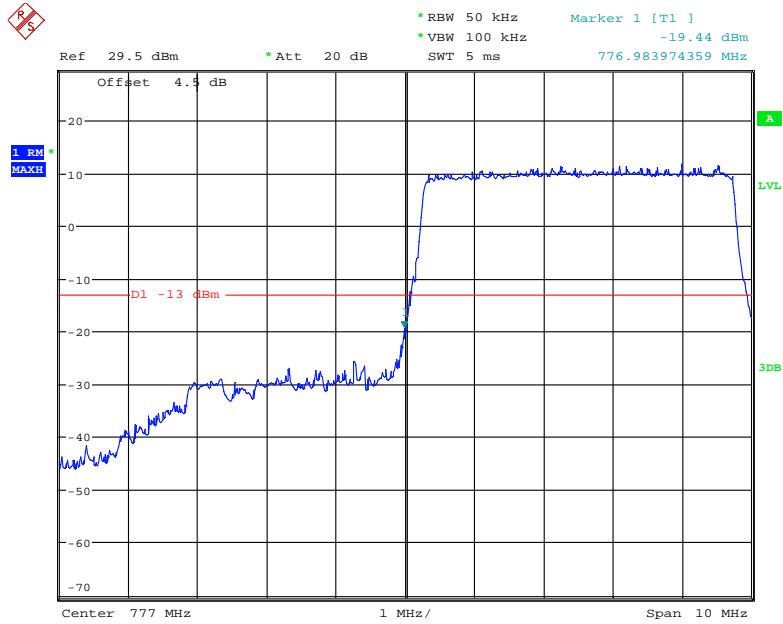
QPSK (5.0 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 13:48:10

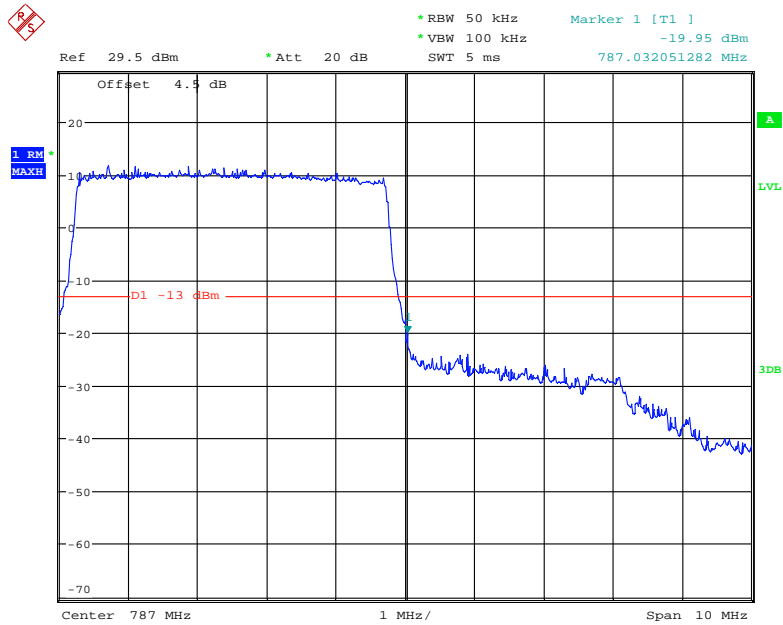


### 16-QAM (5.0 MHz, FULL RB) - Left Band Edge



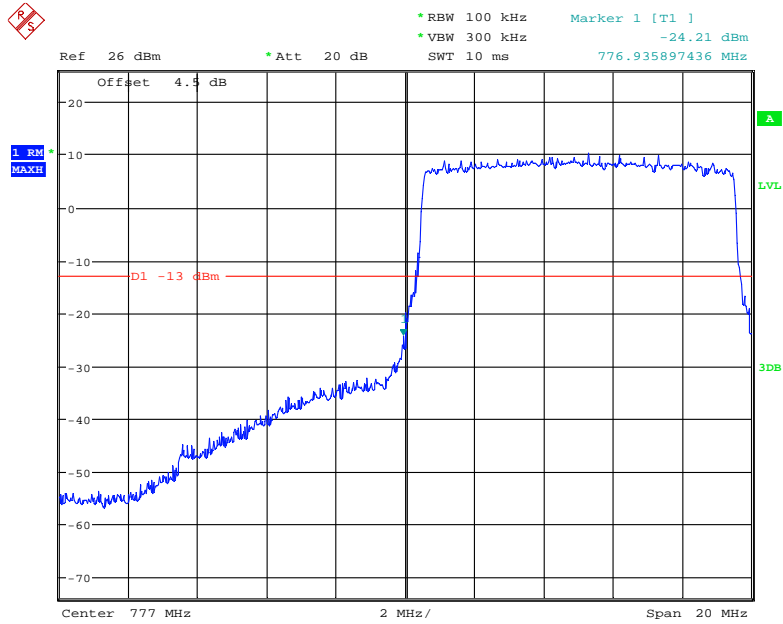
Date: 8.JAN.2018 13:49:43

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



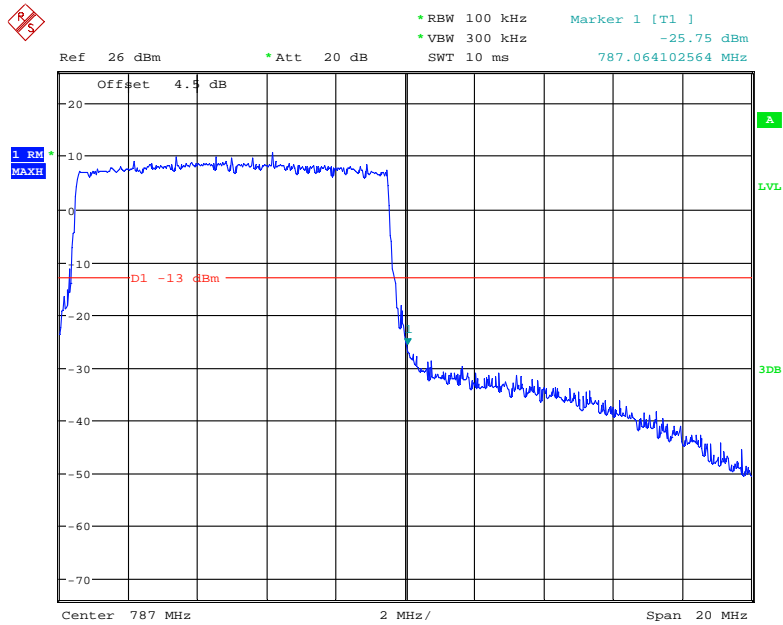
Date: 8.JAN.2018 13:47:15

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



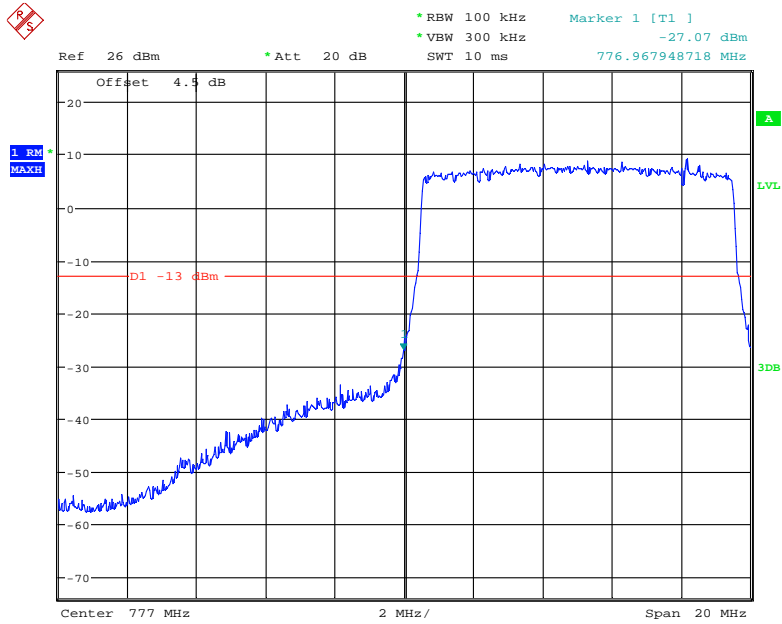
Date: 8.FEB.2018 15:24:20

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



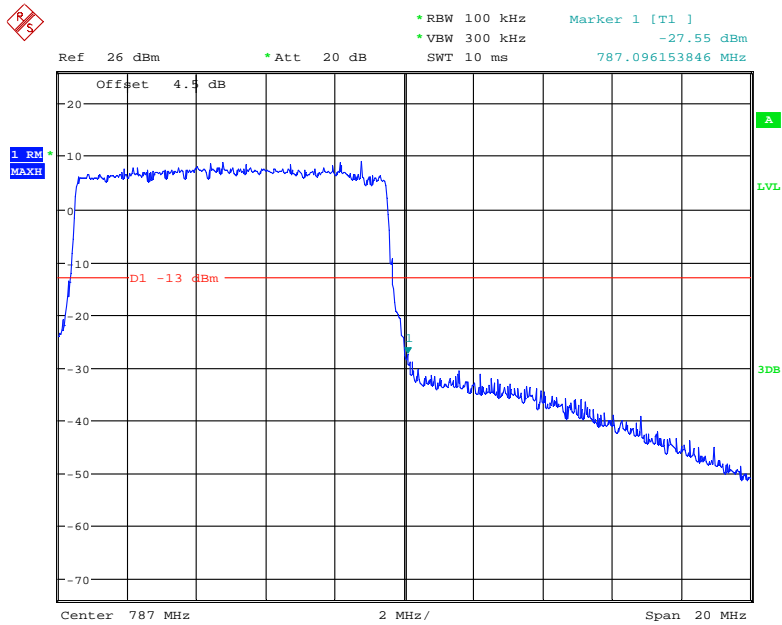
Date: 8.FEB.2018 15:25:52

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



Date: 8.FEB.2018 15:24:46

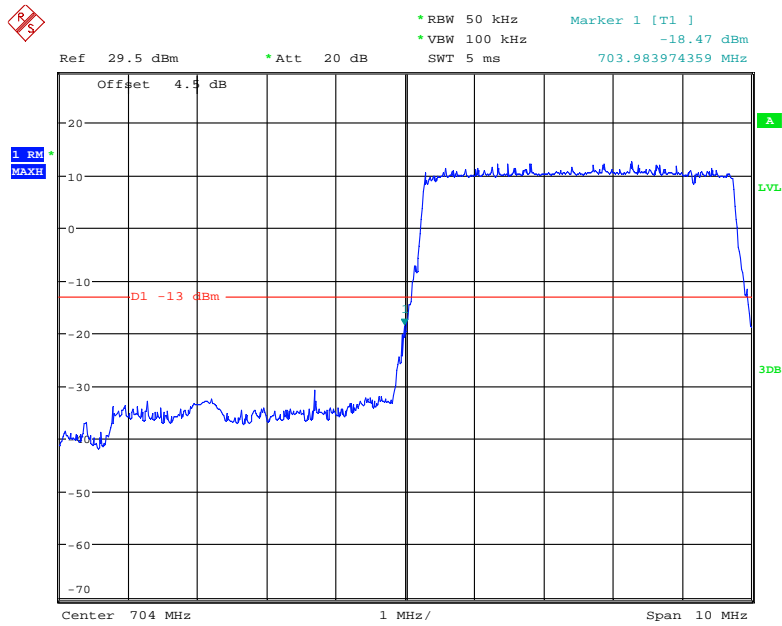
### 16-QAM (10.0 MHz, FULL RB) - Right Band Edge



Date: 8.FEB.2018 15:25:31

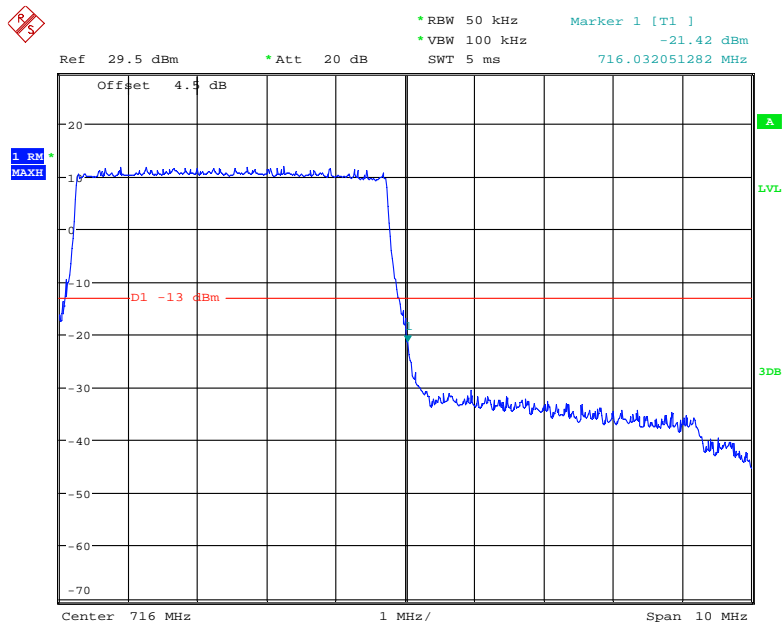
LTE Band 17:

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



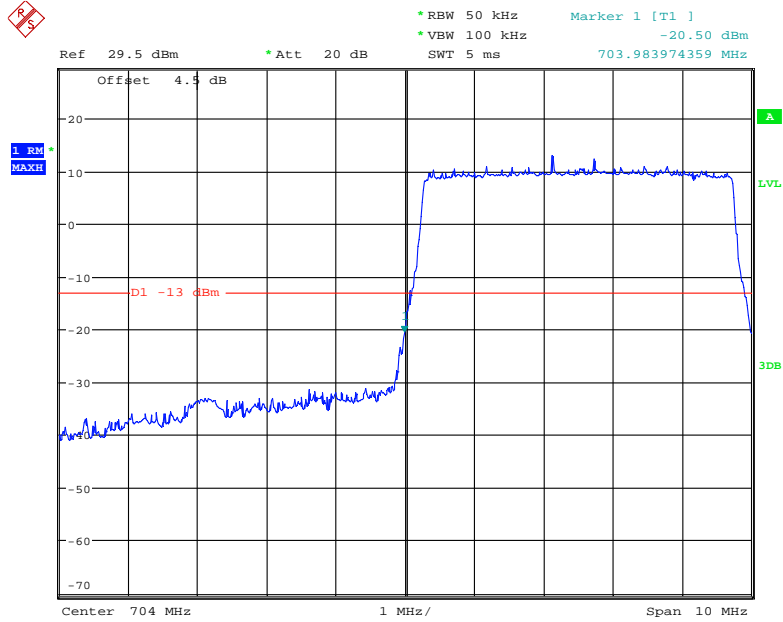
Date: 8.JAN.2018 13:53:26

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



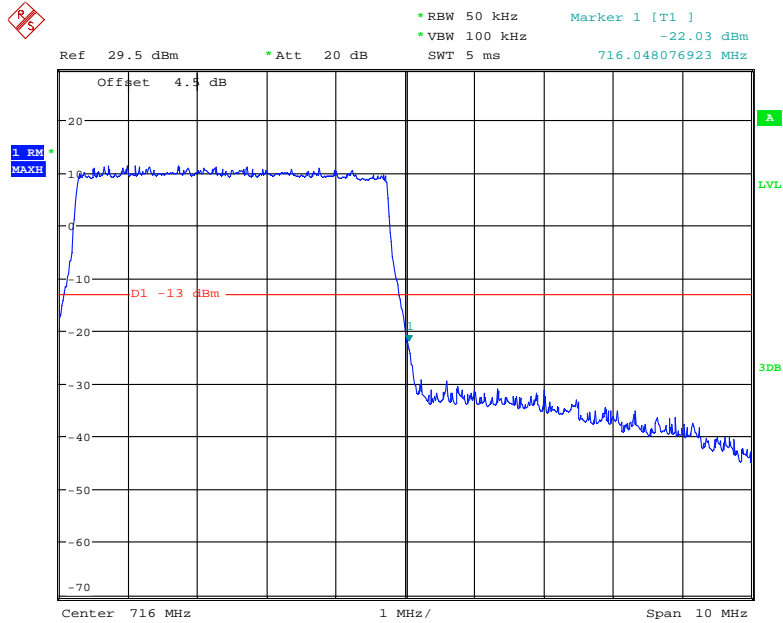
Date: 8.JAN.2018 13:54:14

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



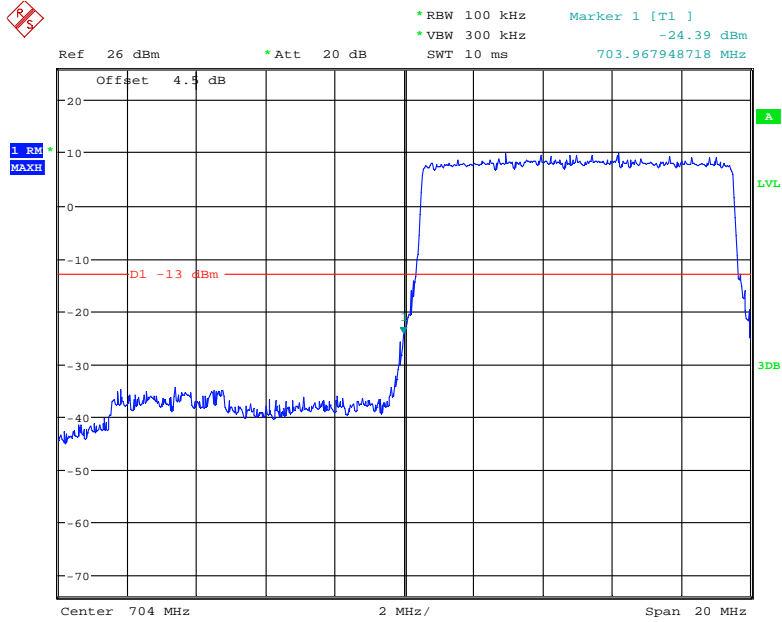
Date: 8.JAN.2018 13:52:33

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



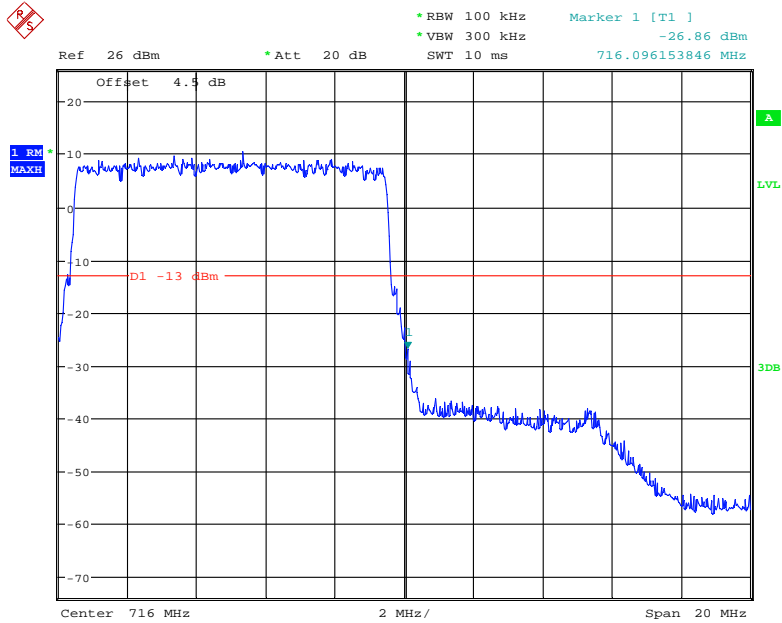
Date: 8.JAN.2018 13:54:54

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



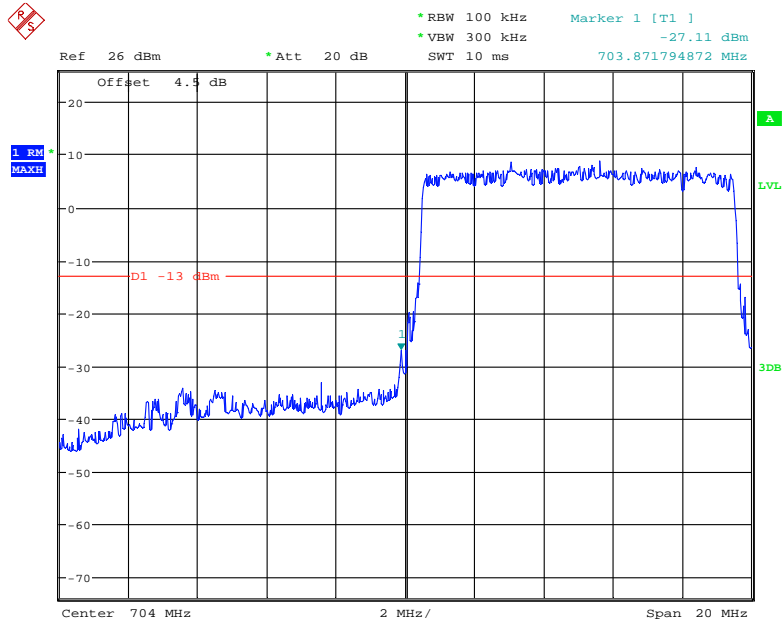
Date: 8.FEB.2018 15:11:12

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



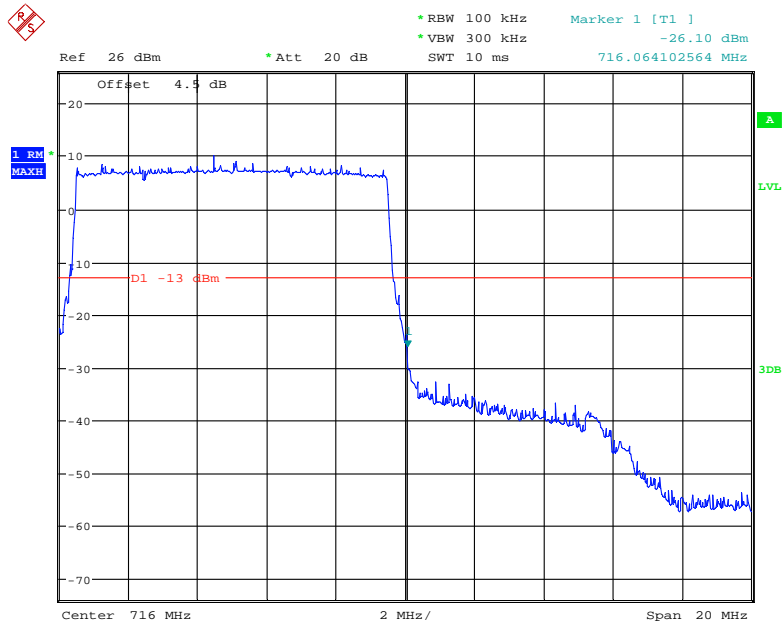
Date: 8.FEB.2018 15:12:45

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



Date: 8.FEB.2018 15:11:40

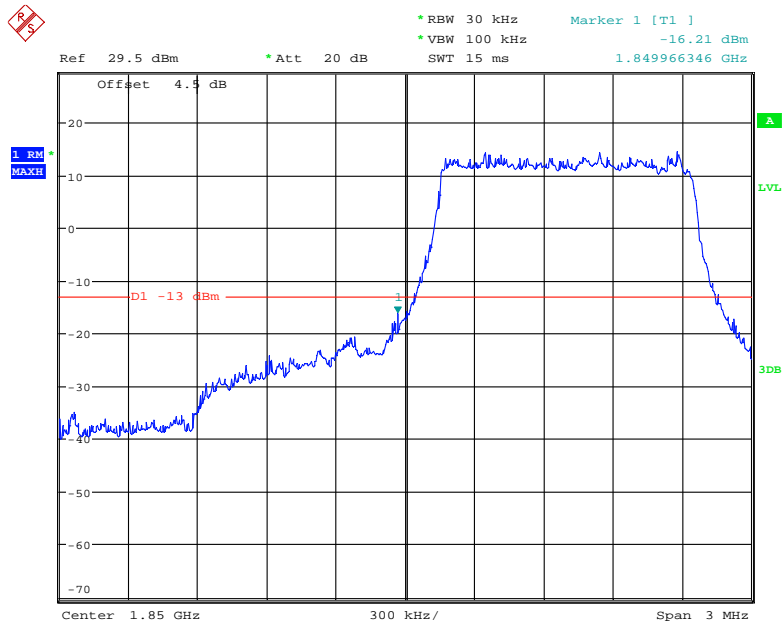
### 16-QAM (10.0 MHz, FULL RB) - Right Band Edge



Date: 8.FEB.2018 15:12:23

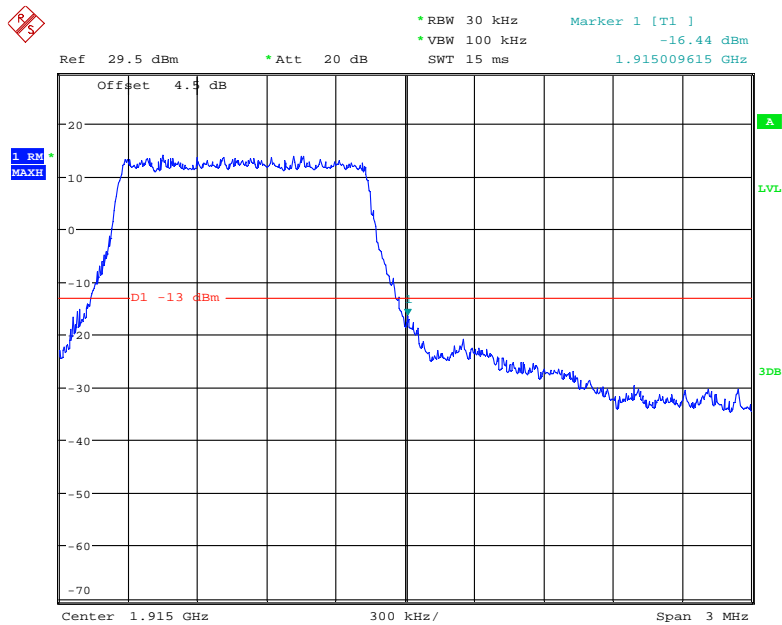
LTE Band 25:

QPSK (1.4 MHz, FULL RB) - Left Band Edge



Date: 8.JAN.2018 14:58:55

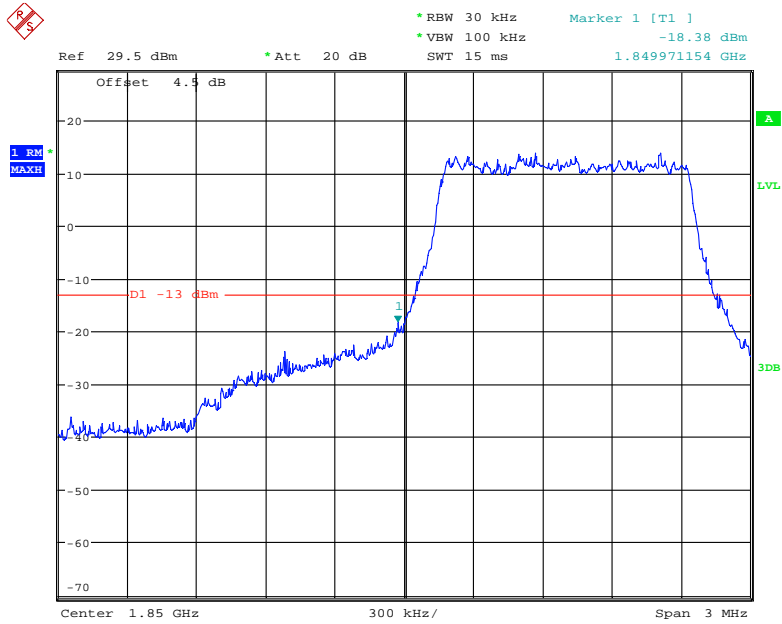
QPSK (1.4 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 14:55:52

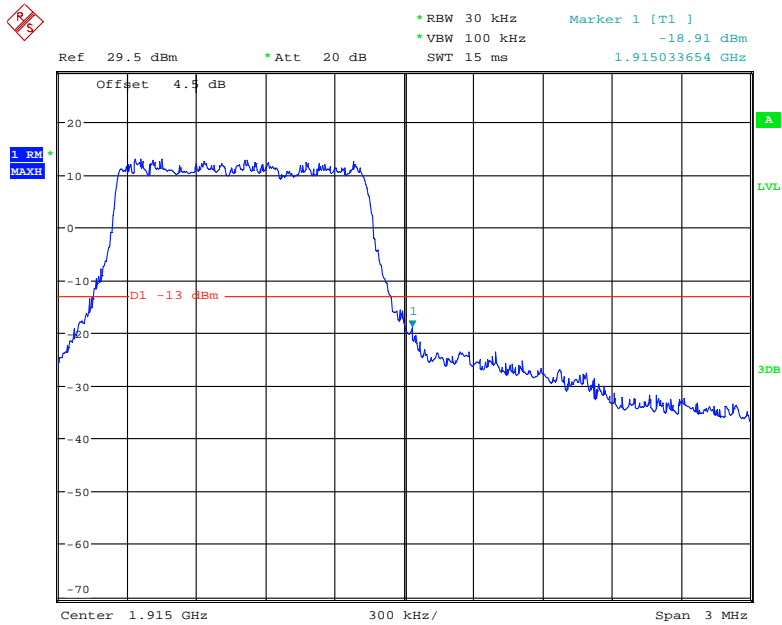


### 16-QAM (1.4 MHz, FULL RB) - Left Band Edge



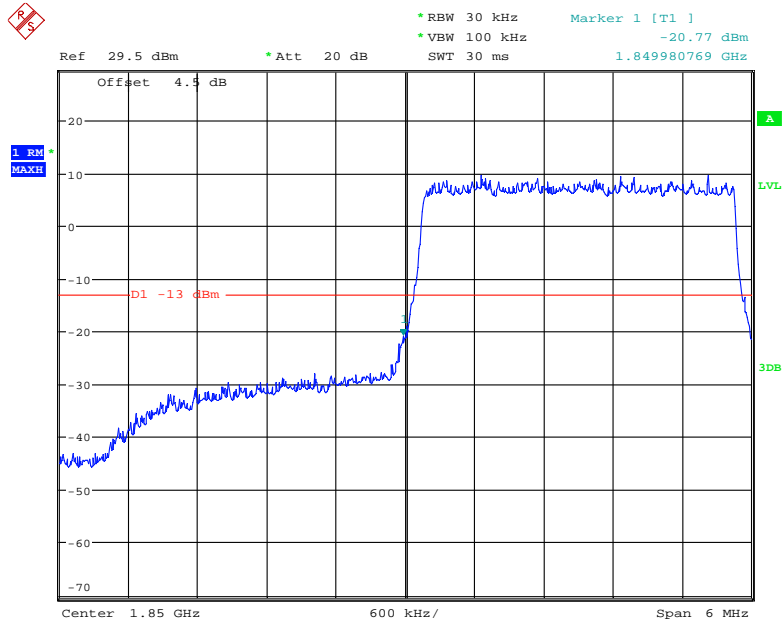
Date: 8.JAN.2018 14:58:24

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



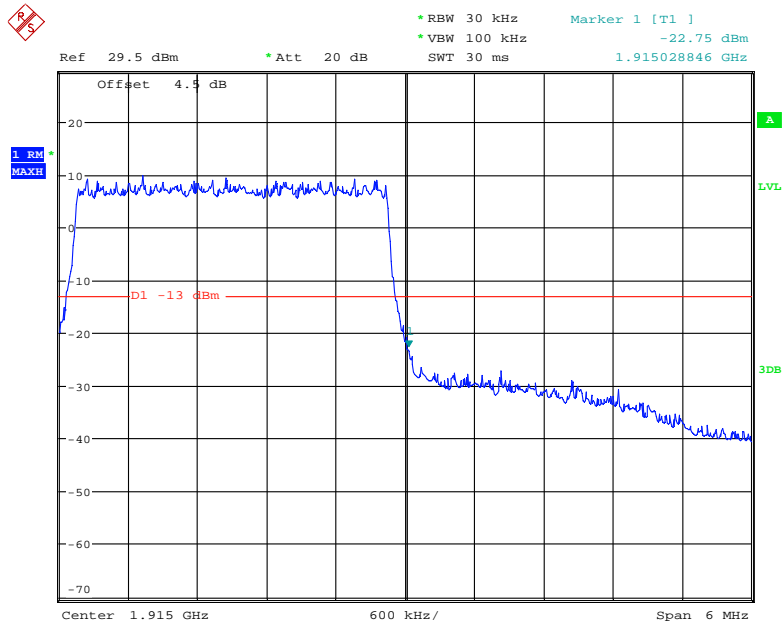
Date: 8.JAN.2018 14:56:51

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



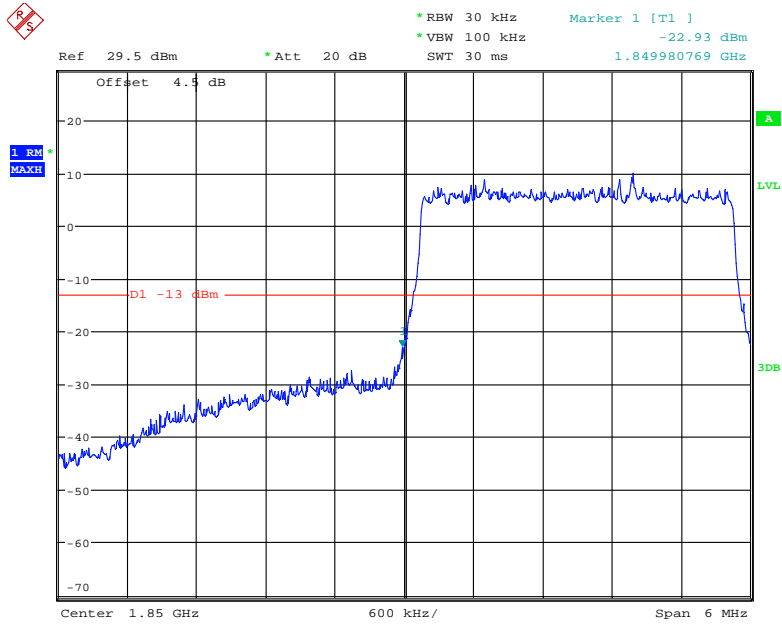
Date: 8.JAN.2018 14:51:21

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



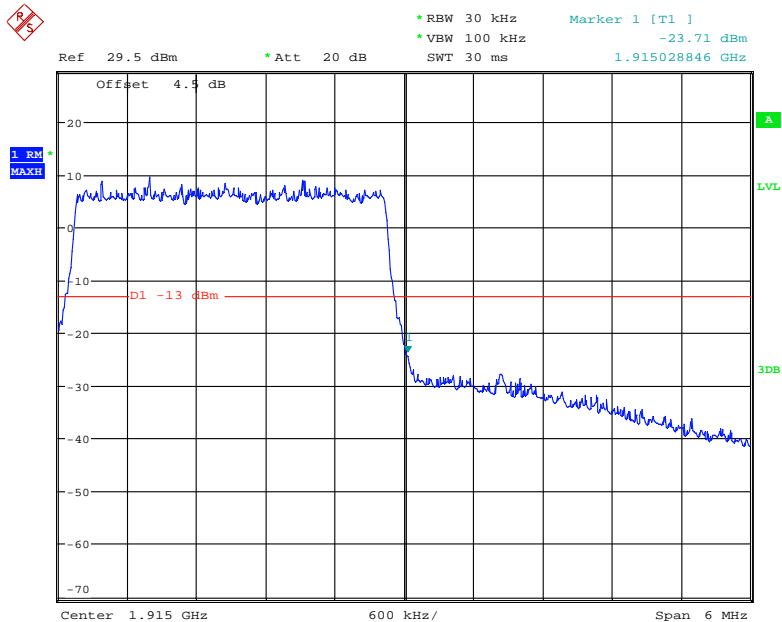
Date: 8.JAN.2018 14:54:11

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



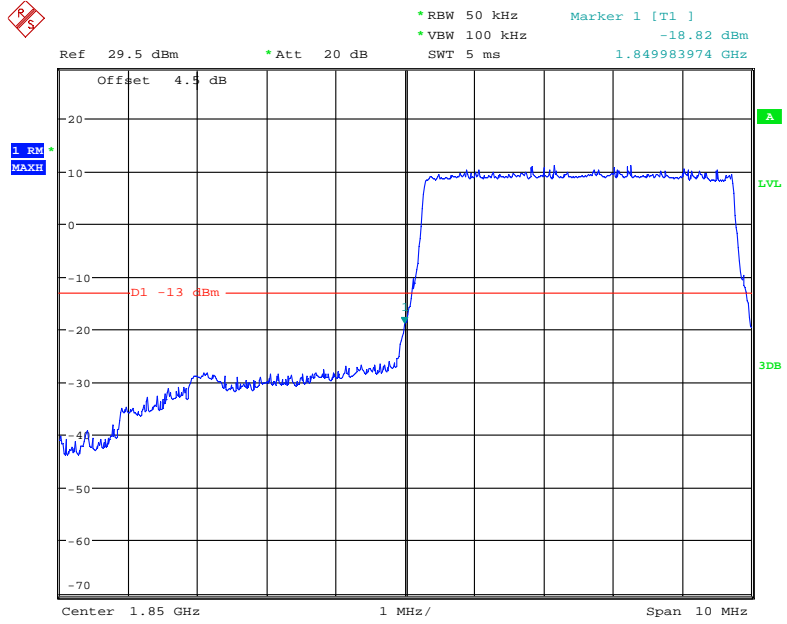
Date: 8.JAN.2018 14:52:06

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



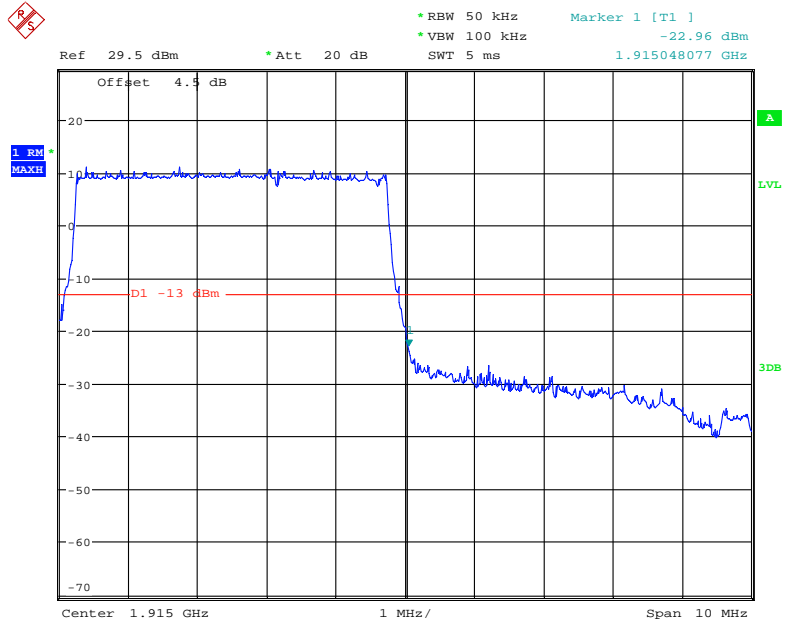
Date: 8.JAN.2018 14:53:19

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



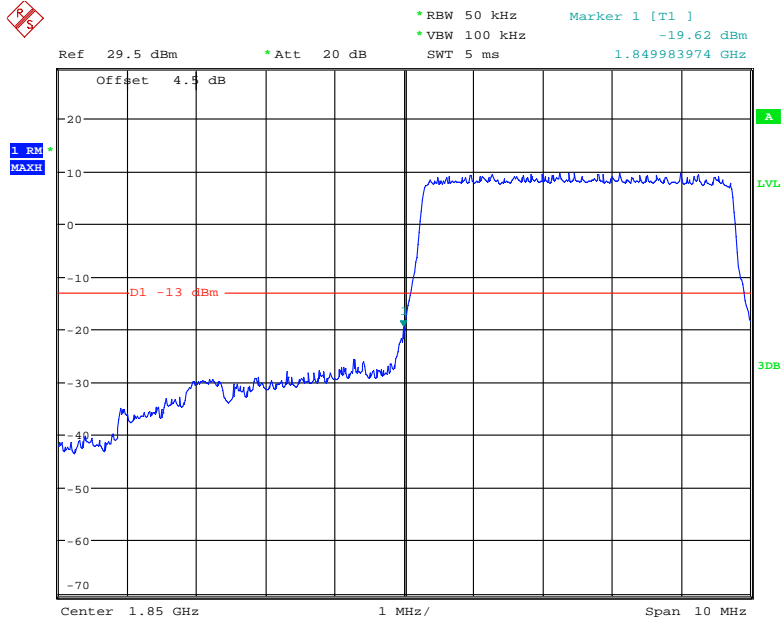
Date: 8.JAN.2018 14:48:19

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



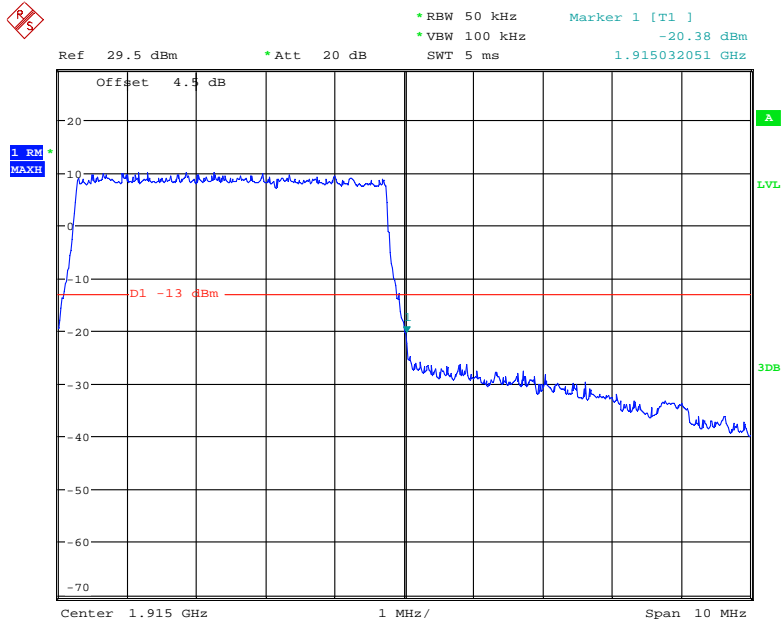
Date: 8.JAN.2018 14:47:32

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



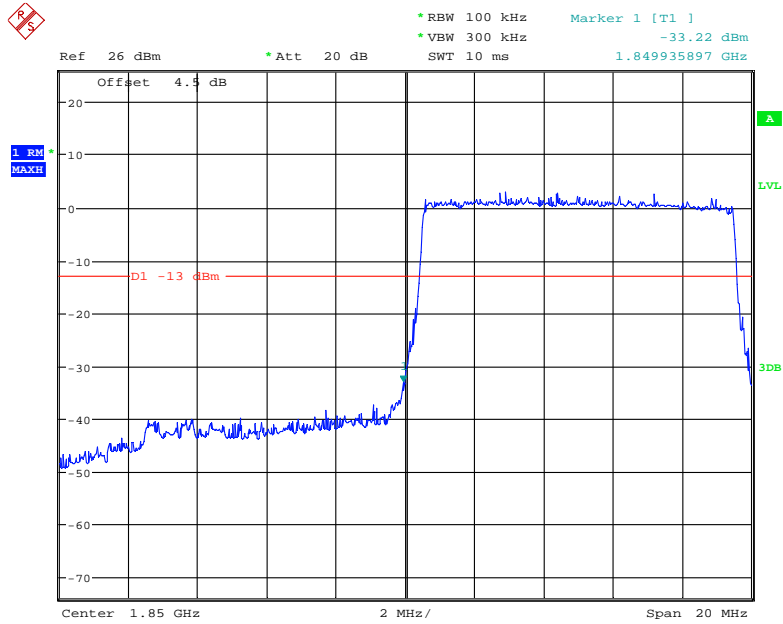
Date: 8.JAN.2018 14:49:01

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



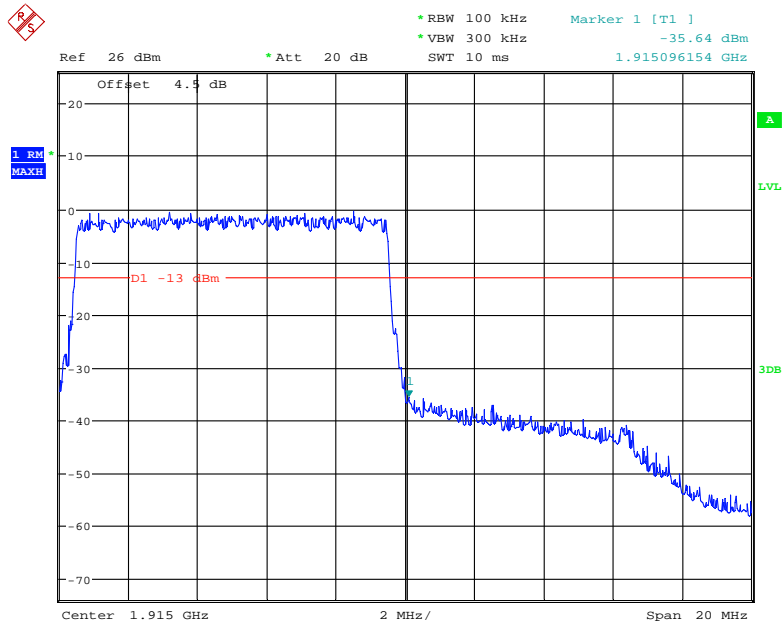
Date: 8.JAN.2018 14:46:33

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



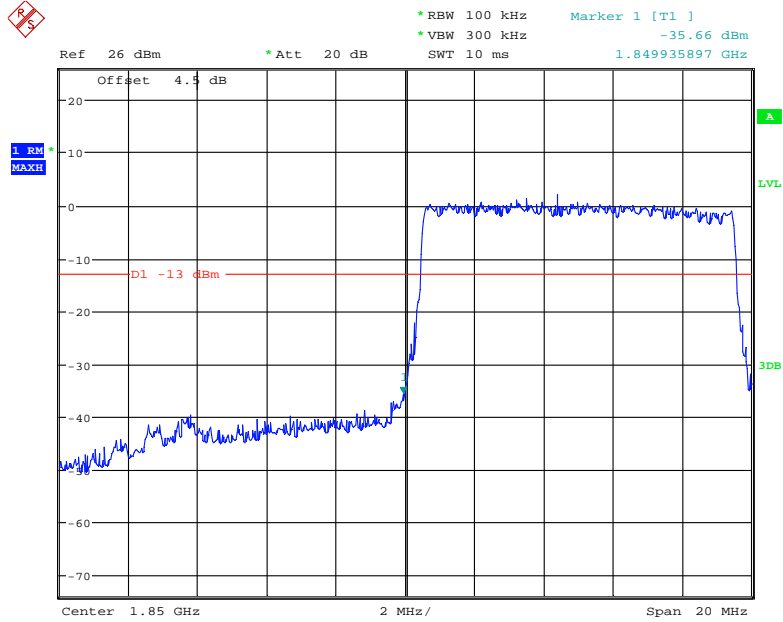
Date: 8.FEB.2018 15:16:06

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



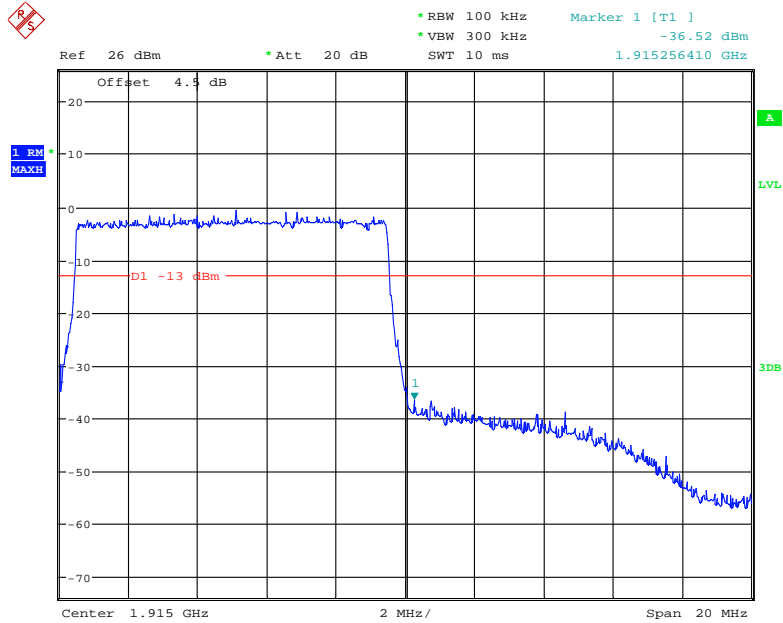
Date: 8.FEB.2018 15:18:49

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



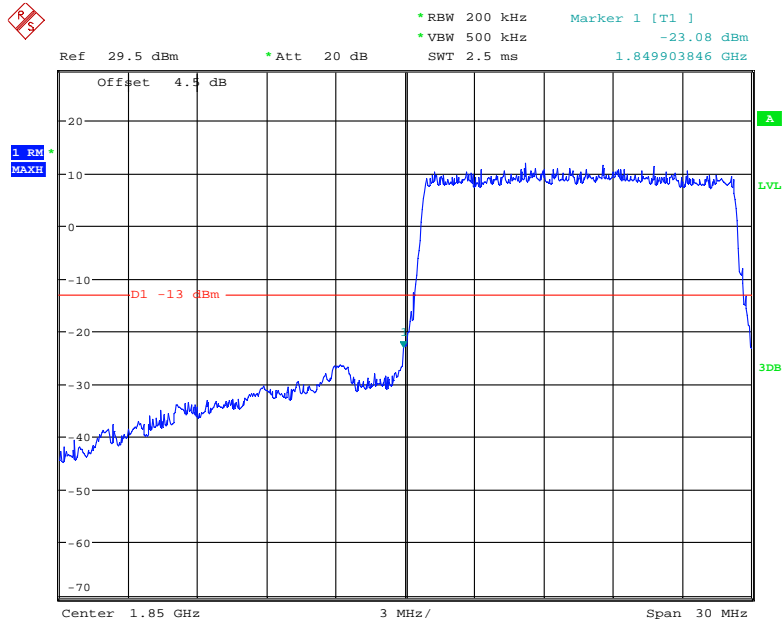
Date: 8.FEB.2018 15:16:30

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



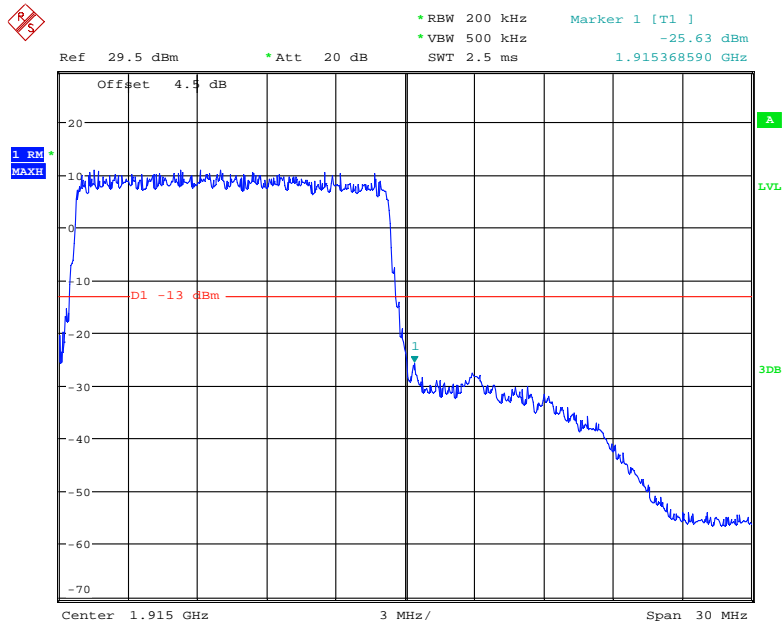
Date: 8.FEB.2018 15:18:28

### QPSK (15 MHz, FULL RB) - Left Band Edge



Date: 8.JAN.2018 14:35:47

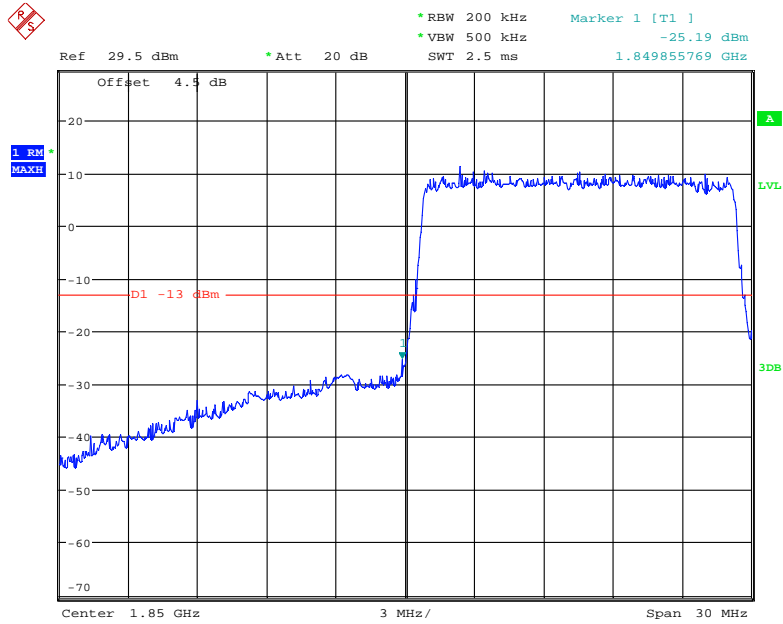
### QPSK (15 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 14:33:53

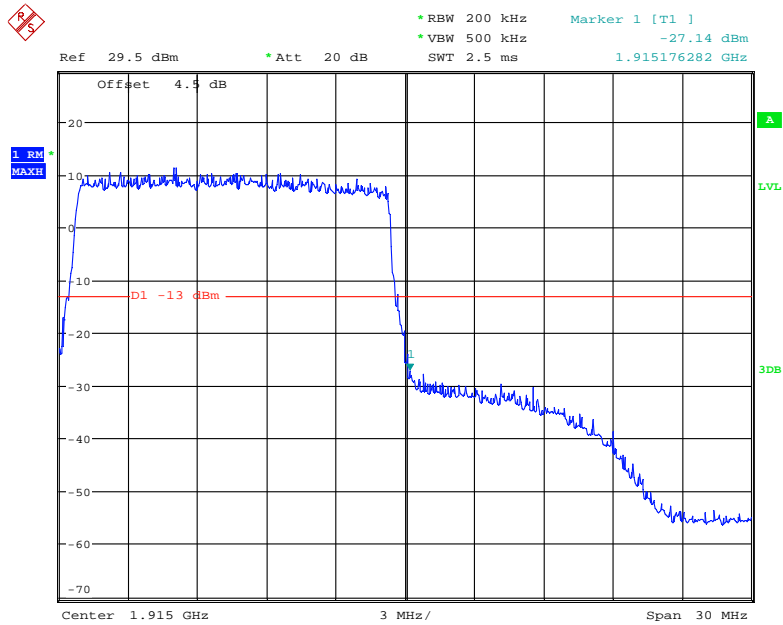


### 16-QAM (15 MHz, FULL RB) - Left Band Edge



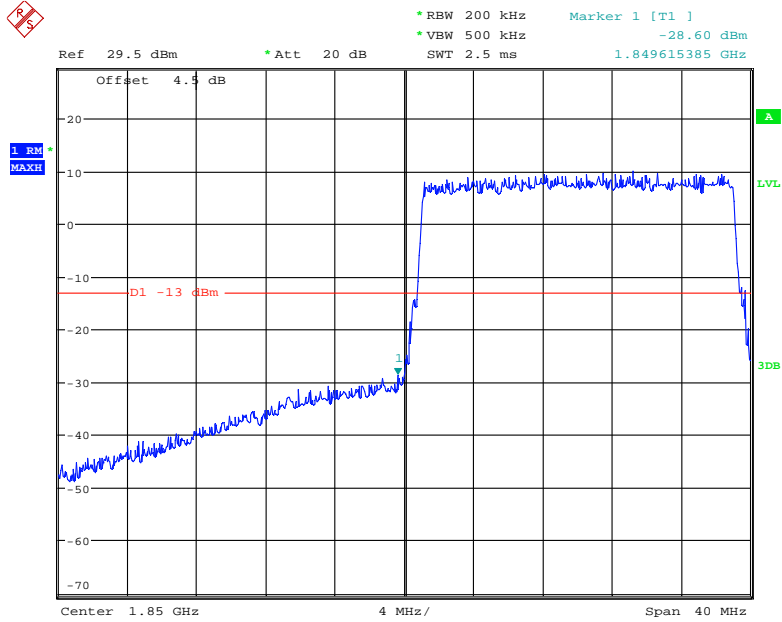
Date: 8.JAN.2018 14:36:35

### 16-QAM (15 MHz, FULL RB) - Right Band Edge



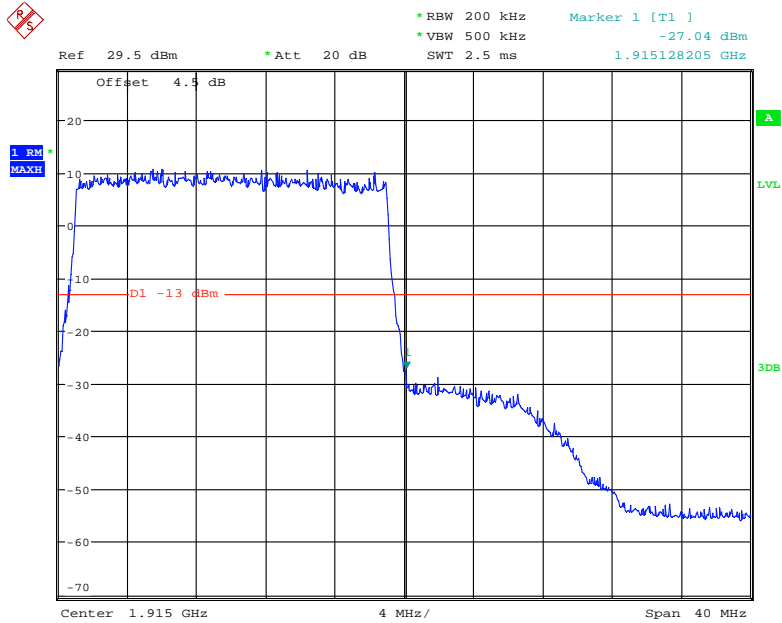
Date: 8.JAN.2018 14:33:19

### QPSK (20 MHz, FULL RB) - Left Band Edge



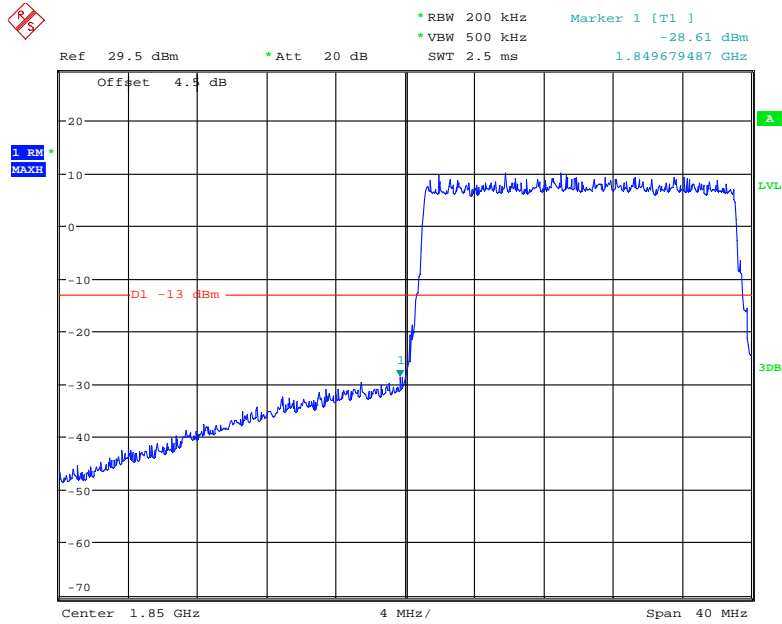
Date: 8.JAN.2018 14:29:41

### QPSK (20 MHz, FULL RB) - Right Band Edge



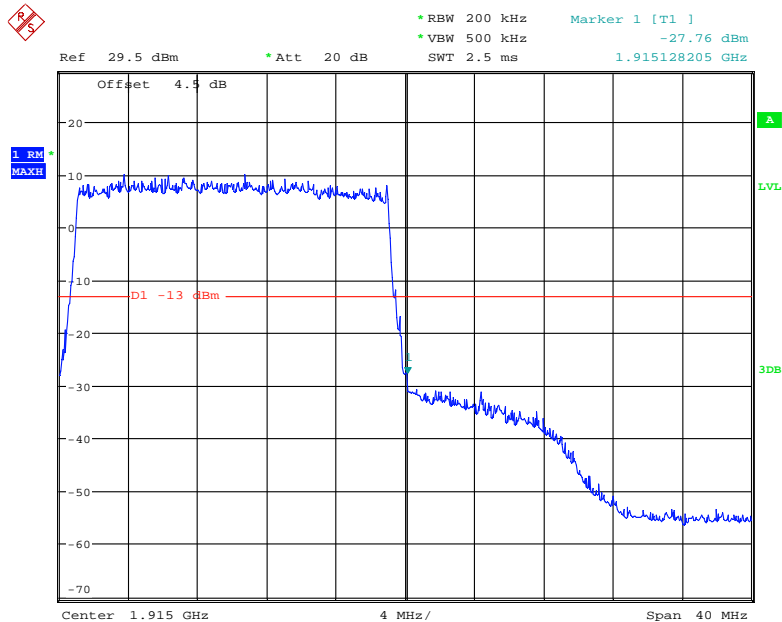
Date: 8.JAN.2018 14:30:55

### 16-QAM (20 MHz, FULL RB) - Left Band Edge



Date: 8.JAN.2018 14:28:56

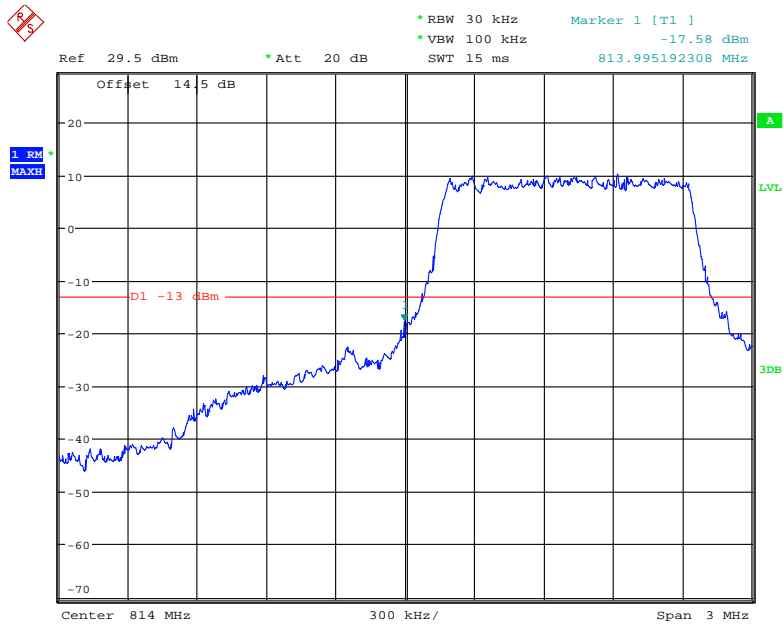
### 16-QAM (20 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 14:31:59

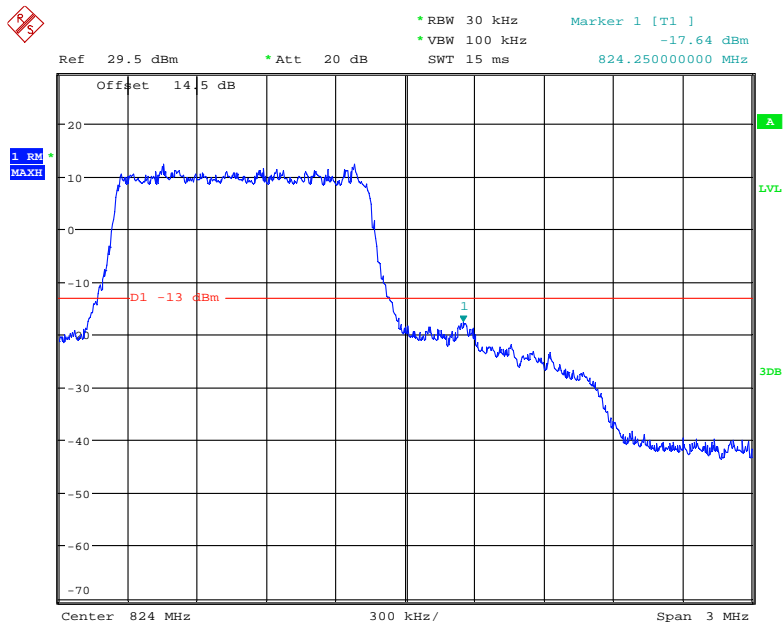
LTE Band 26:

QPSK (1.4 MHz, FULL RB) - Left Band Edge



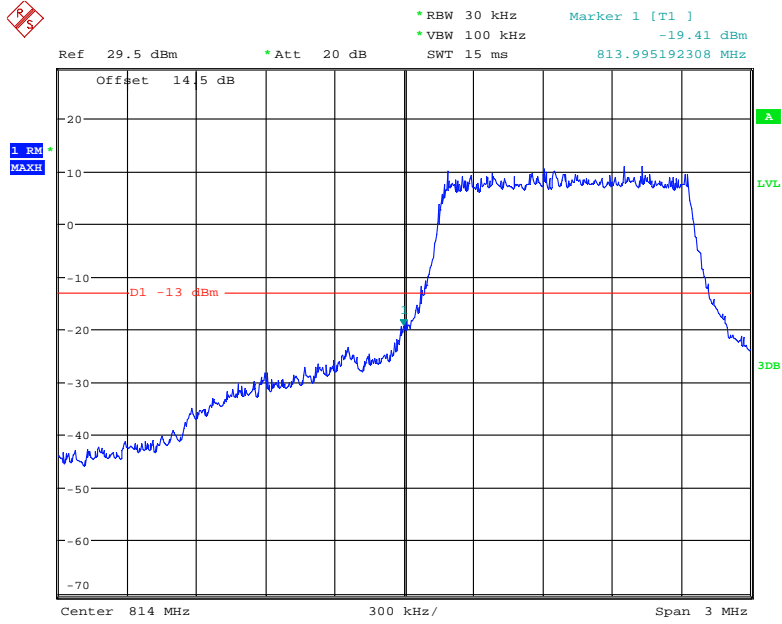
Date: 8.JAN.2018 09:39:39

QPSK (1.4 MHz, FULL RB) - Right Band Edge



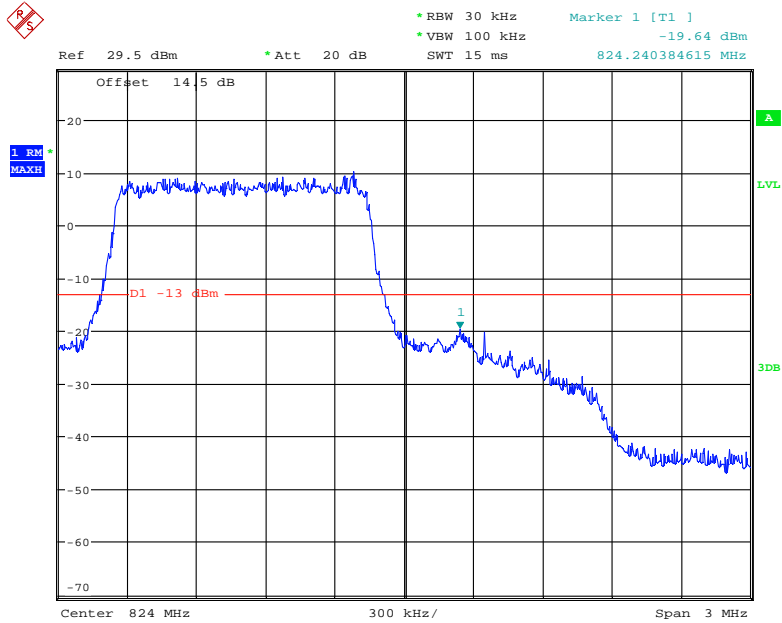
Date: 8.JAN.2018 09:41:01

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



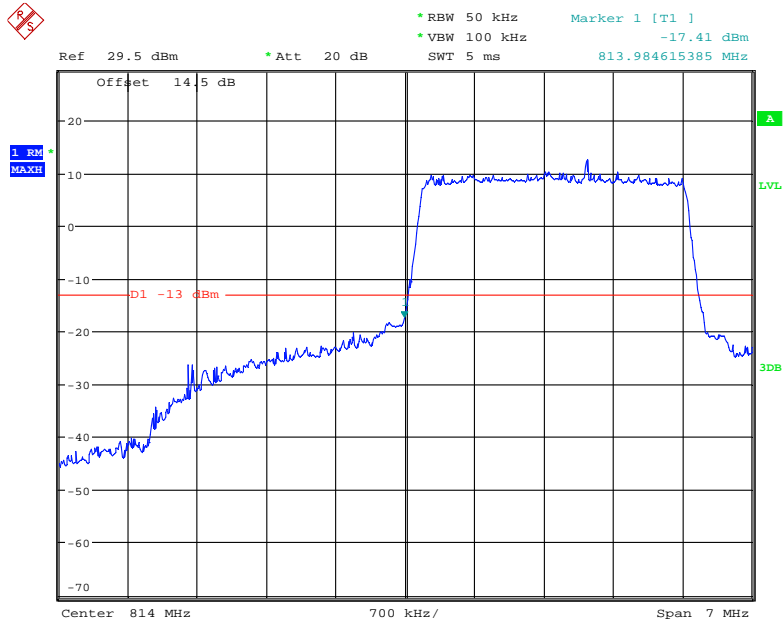
Date: 8.JAN.2018 10:30:35

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



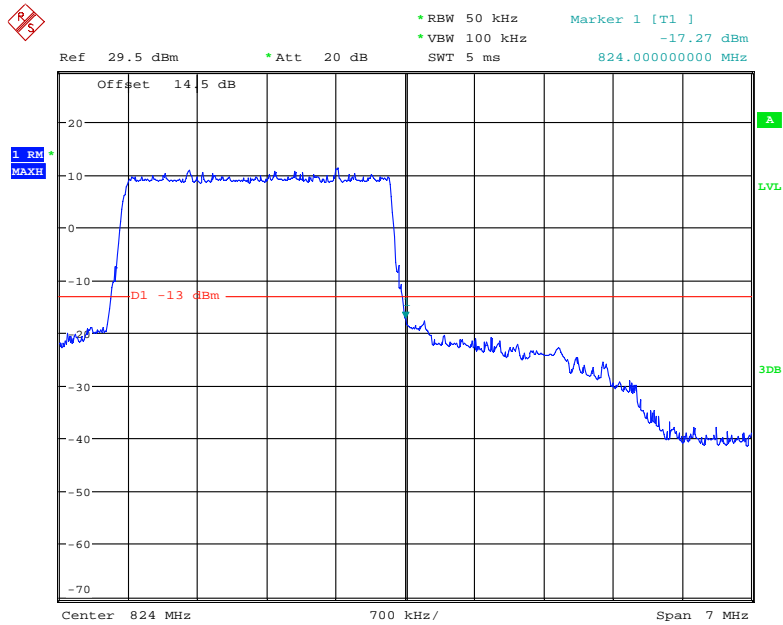
Date: 8.JAN.2018 10:31:39

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



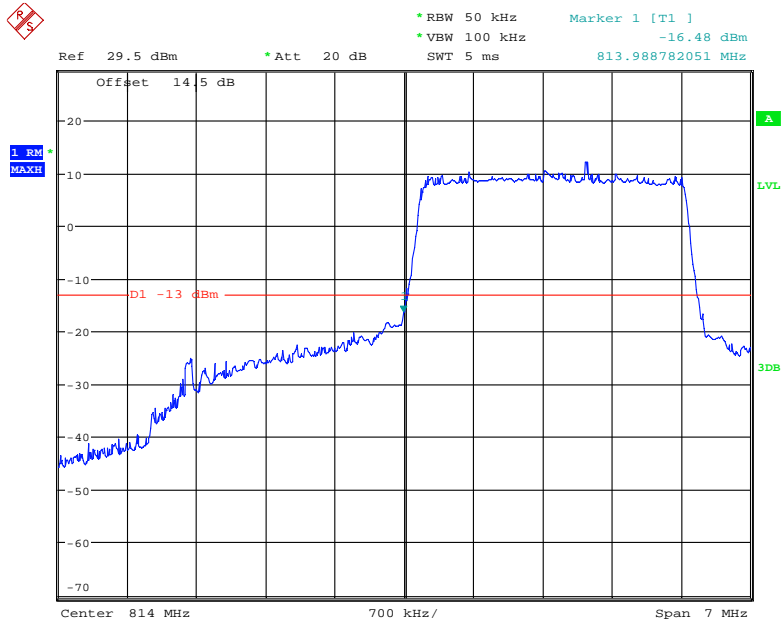
Date: 8.JAN.2018 09:45:37

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



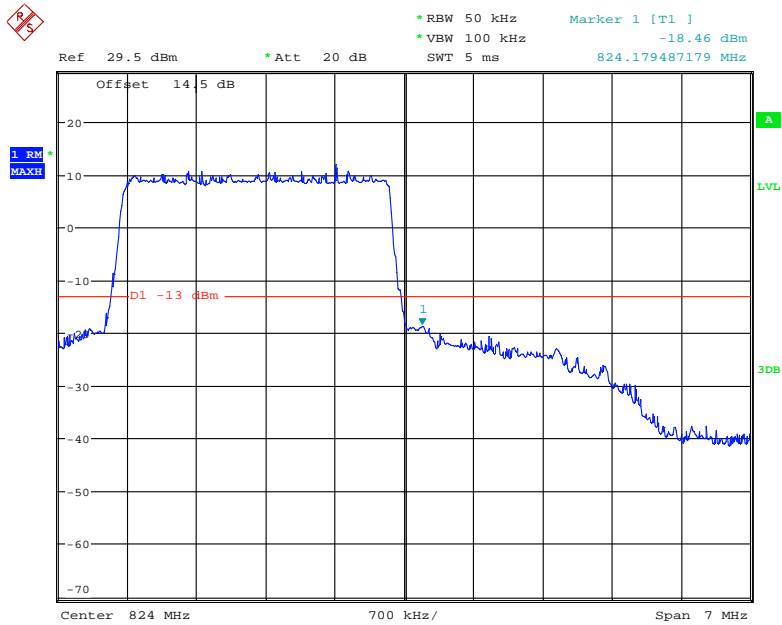
Date: 8.JAN.2018 09:46:21

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



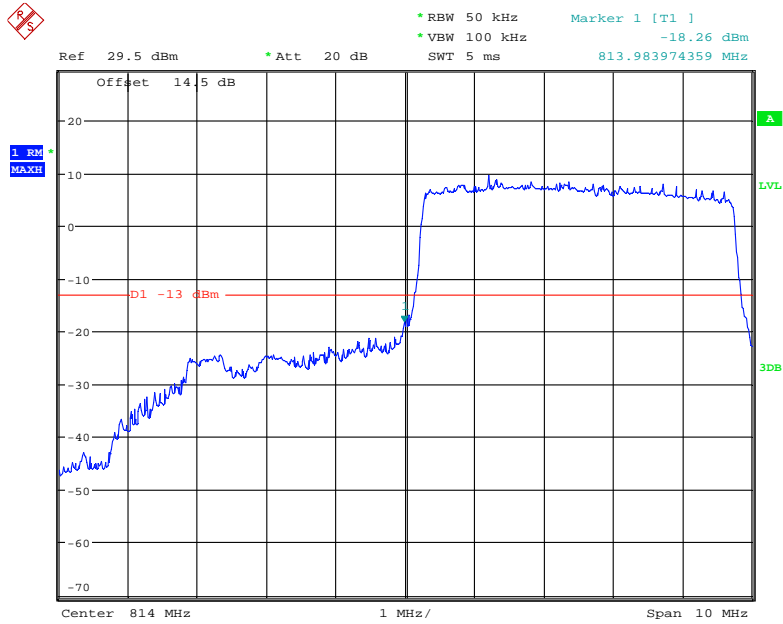
Date: 8.JAN.2018 10:01:48

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



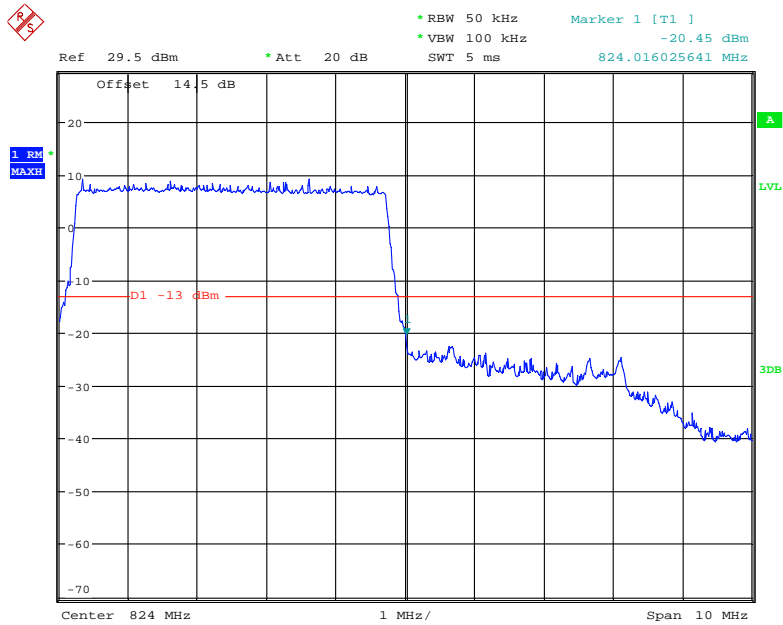
Date: 8.JAN.2018 10:02:39

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



Date: 8.JAN.2018 09:48:30

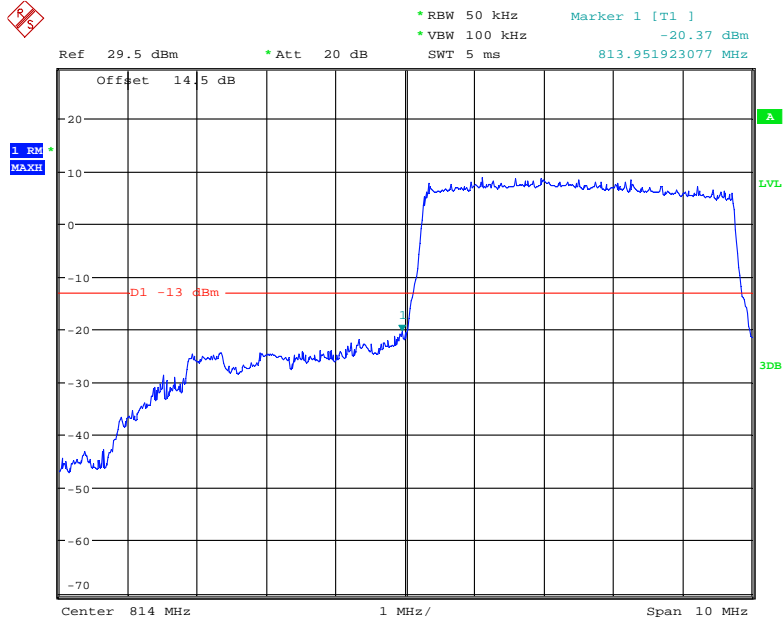
### QPSK (5.0 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 09:47:55

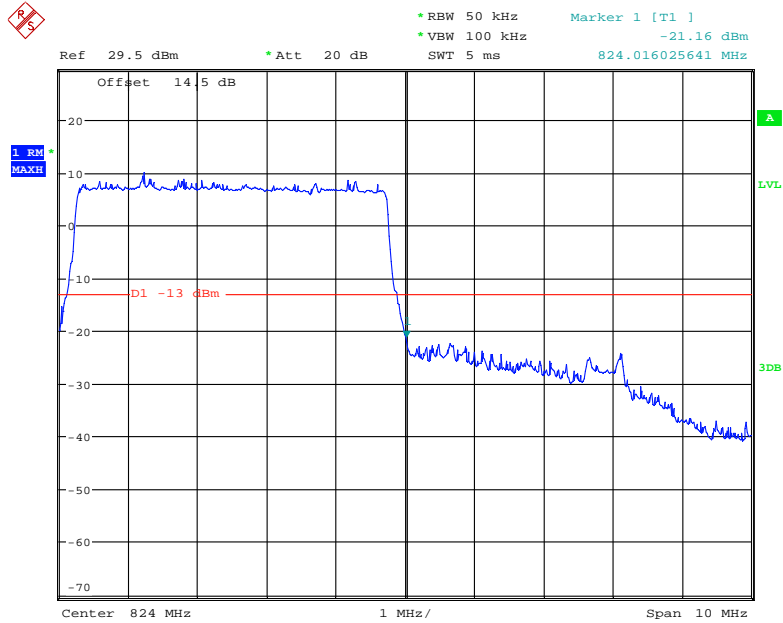


### 16-QAM (5.0 MHz, FULL RB) - Left Band Edge



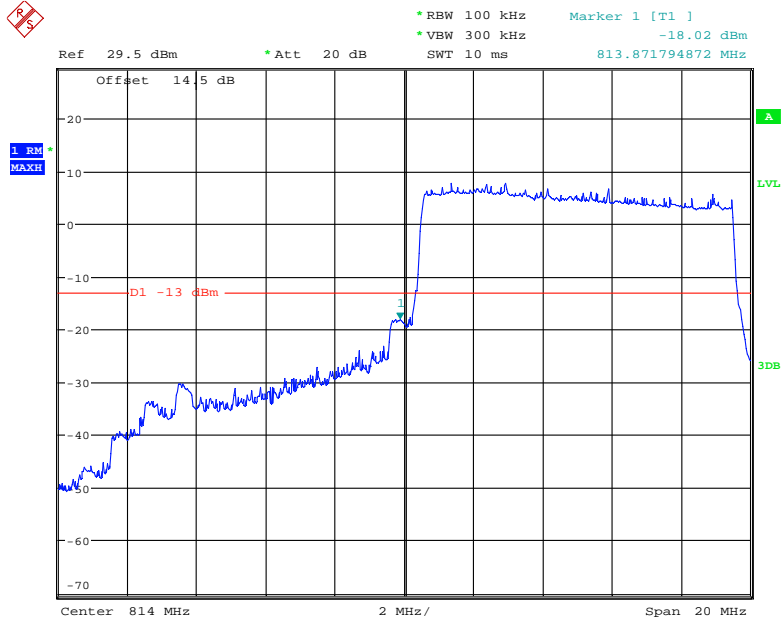
Date: 8.JAN.2018 09:59:16

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



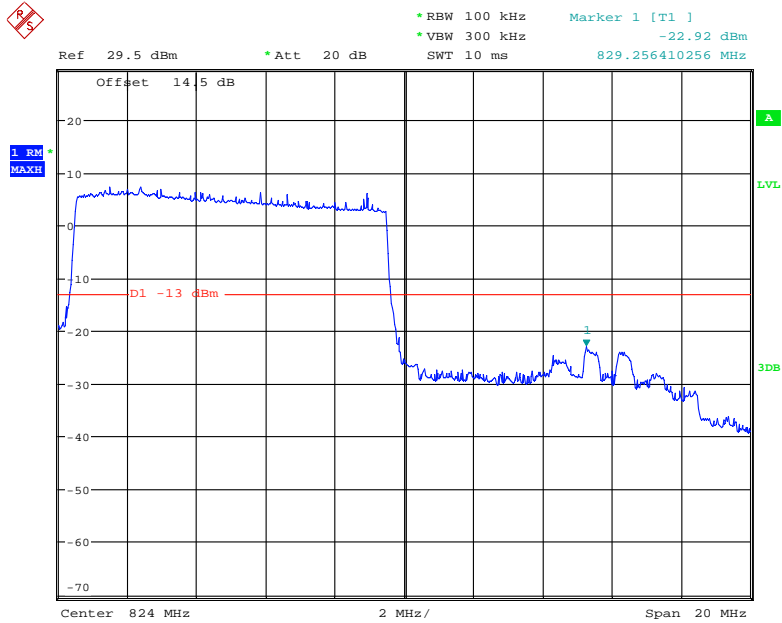
Date: 8.JAN.2018 10:00:00

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



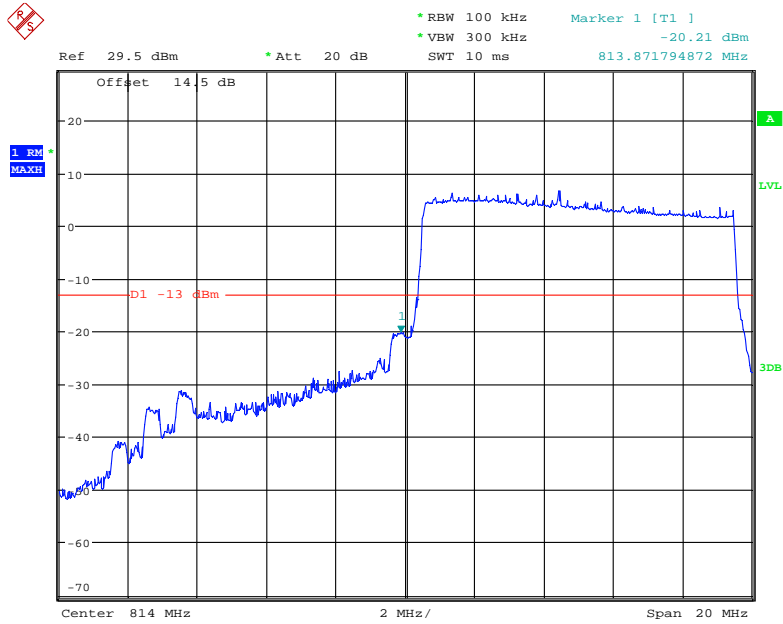
Date: 8.JAN.2018 09:54:18

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



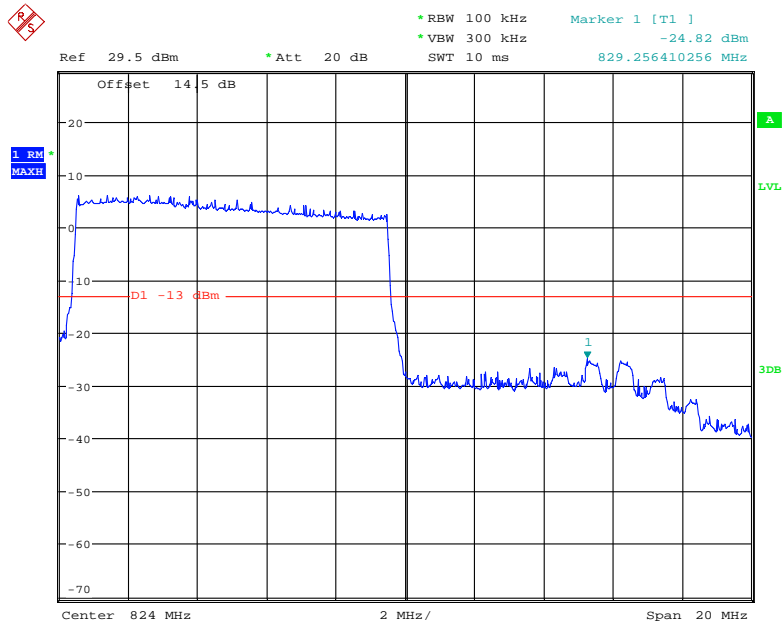
Date: 8.JAN.2018 09:54:55

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



Date: 8.JAN.2018 09:57:44

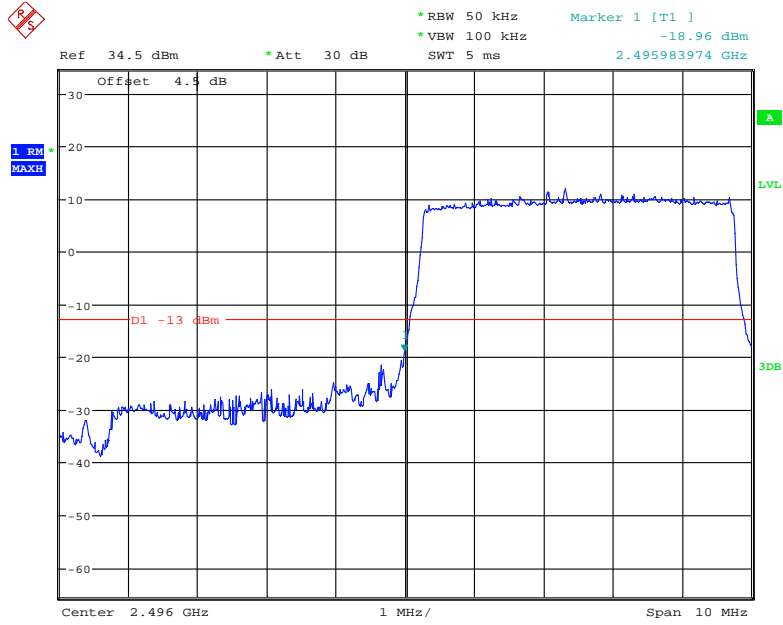
### 16-QAM (10.0 MHz, FULL RB) - Right Band Edge



Date: 8.JAN.2018 09:57:07

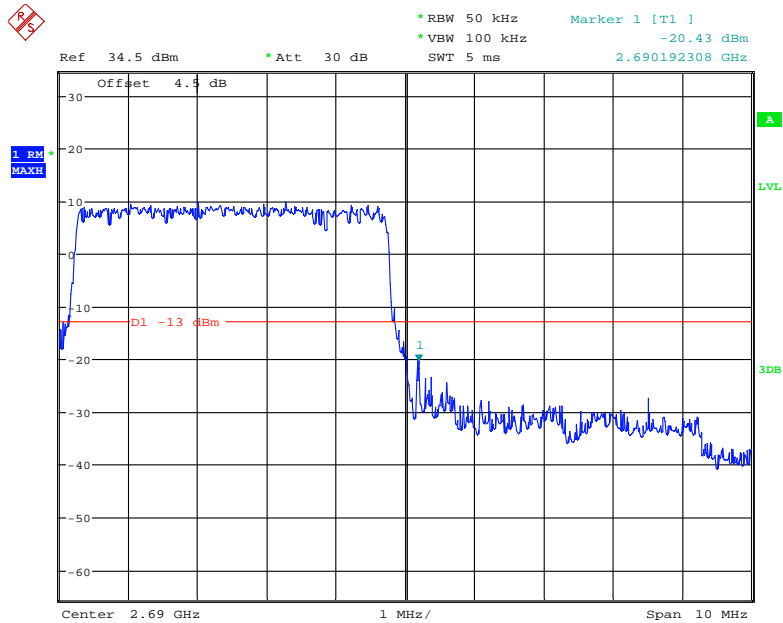
LTE Band 41:

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



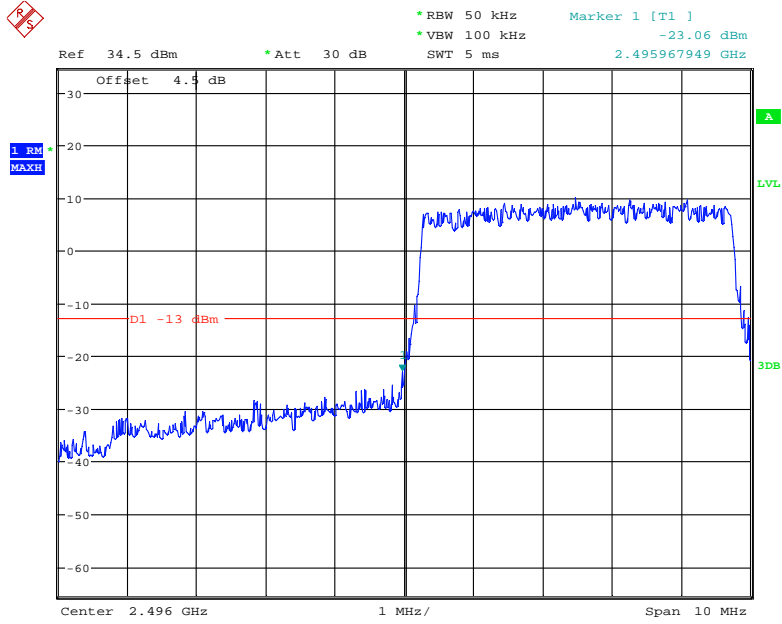
Date: 11.FEB.2018 15:29:25

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



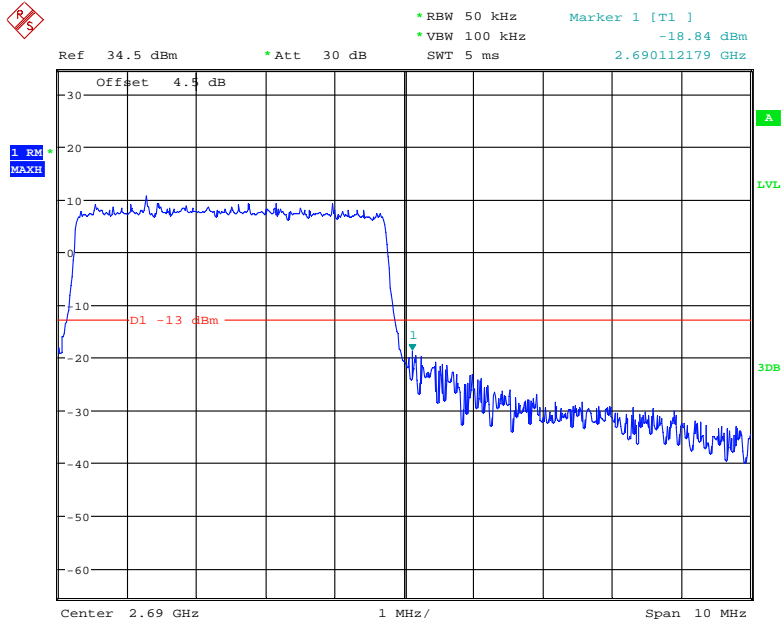
Date: 11.FEB.2018 15:28:05

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



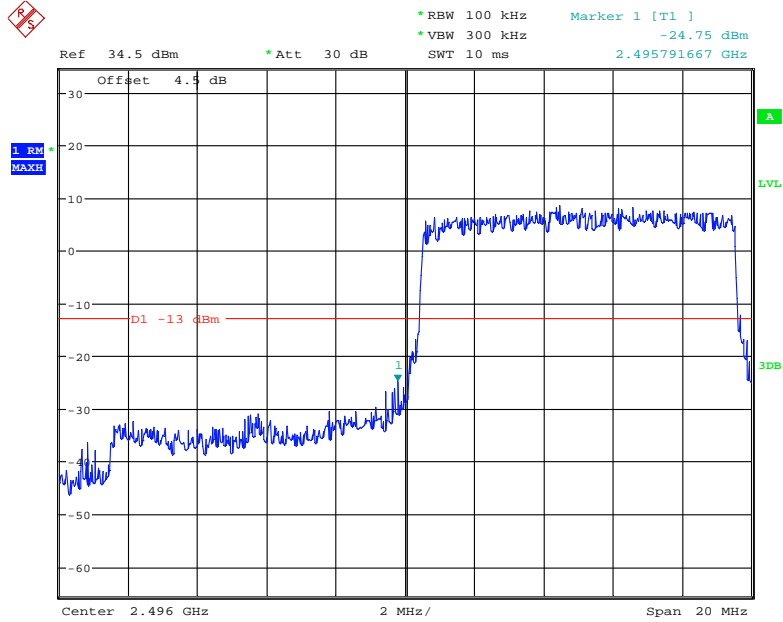
Date: 11.FEB.2018 15:29:46

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



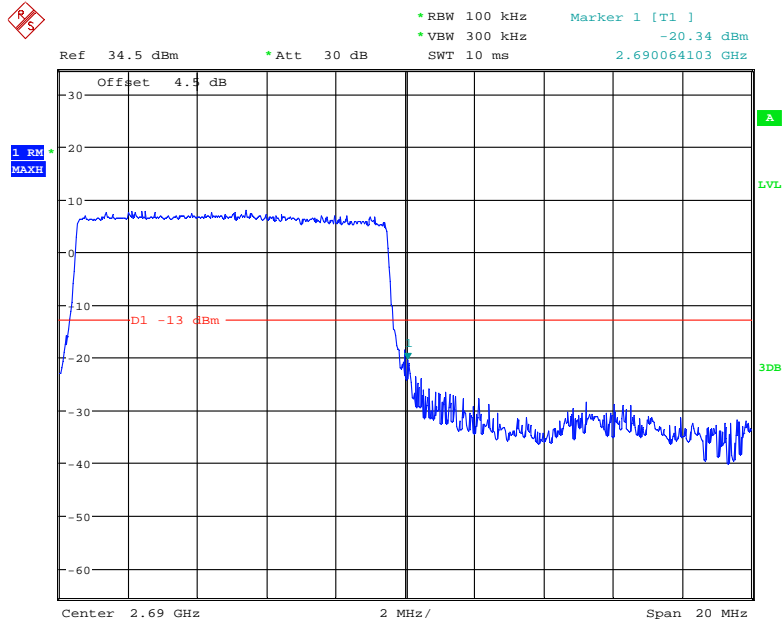
Date: 24.FEB.2018 15:15:41

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



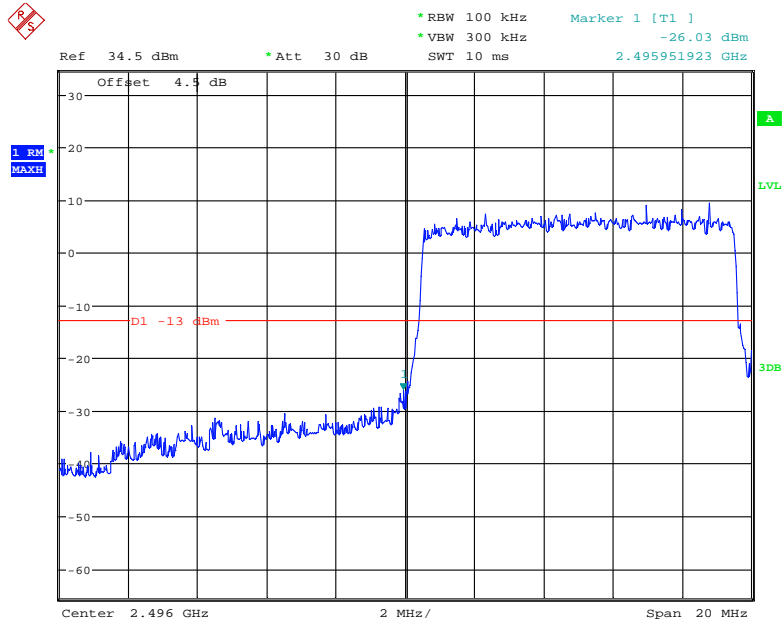
Date: 11.FEB.2018 15:24:46

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



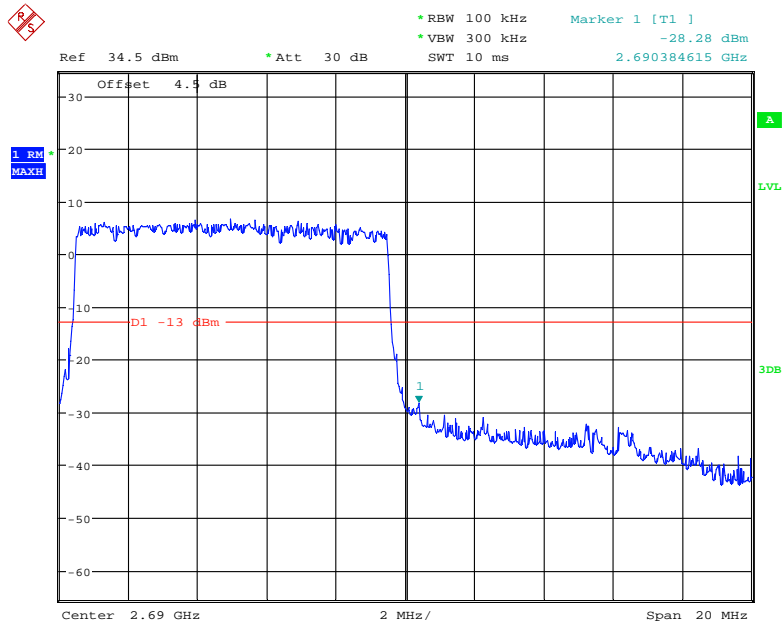
Date: 11.FEB.2018 15:25:46

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



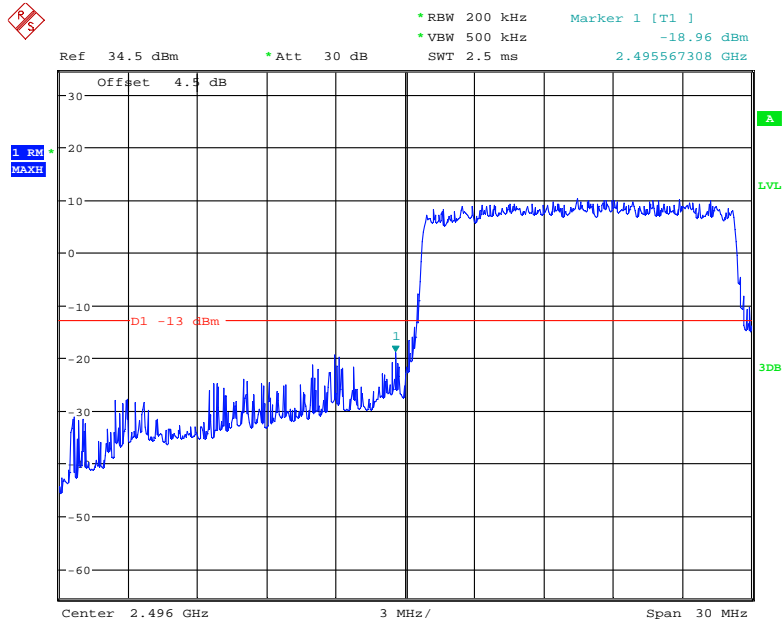
Date: 11.FEB.2018 15:24:14

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



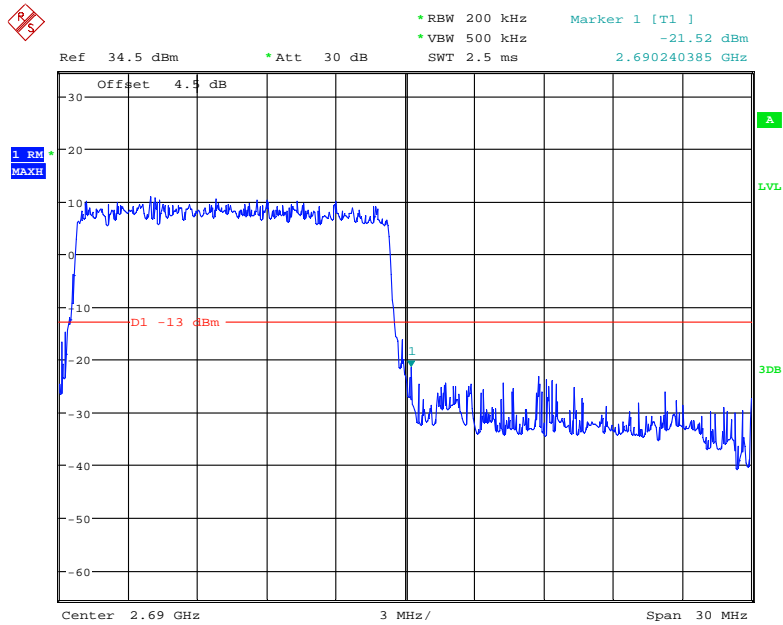
Date: 11.FEB.2018 15:26:17

### QPSK (15 MHz, FULL RB) - Left Band Edge



Date: 11.FEB.2018 15:21:39

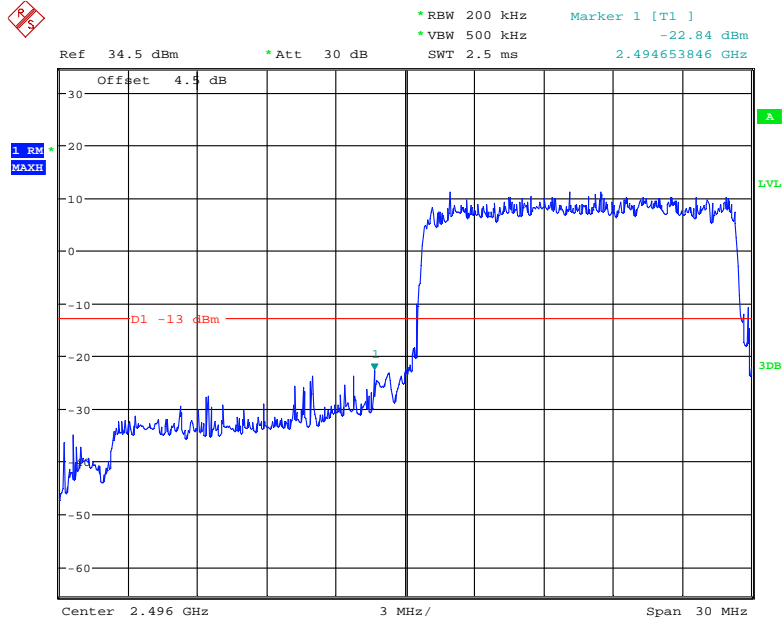
### QPSK (15 MHz, FULL RB) - Right Band Edge



Date: 11.FEB.2018 15:17:40

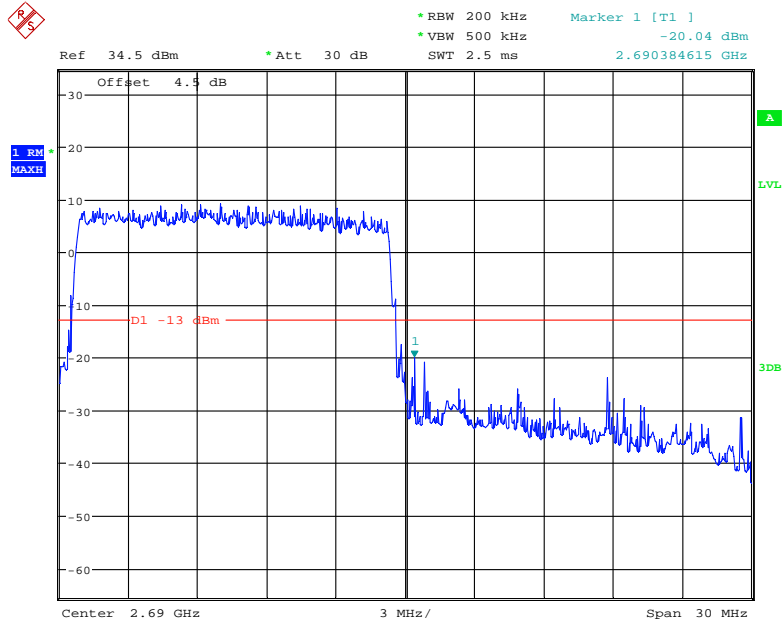


### 16-QAM (15 MHz, FULL RB) - Left Band Edge



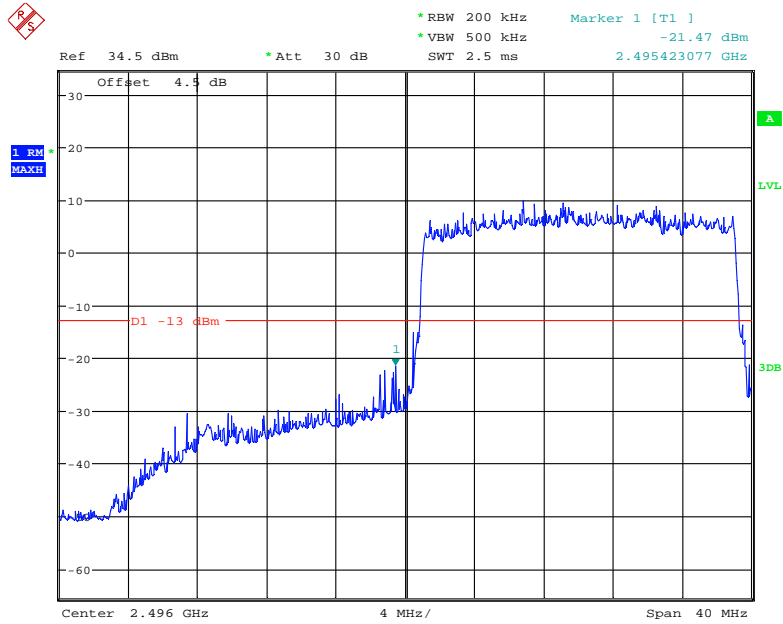
Date: 11.FEB.2018 15:19:54

### 16-QAM (15 MHz, FULL RB) - Right Band Edge



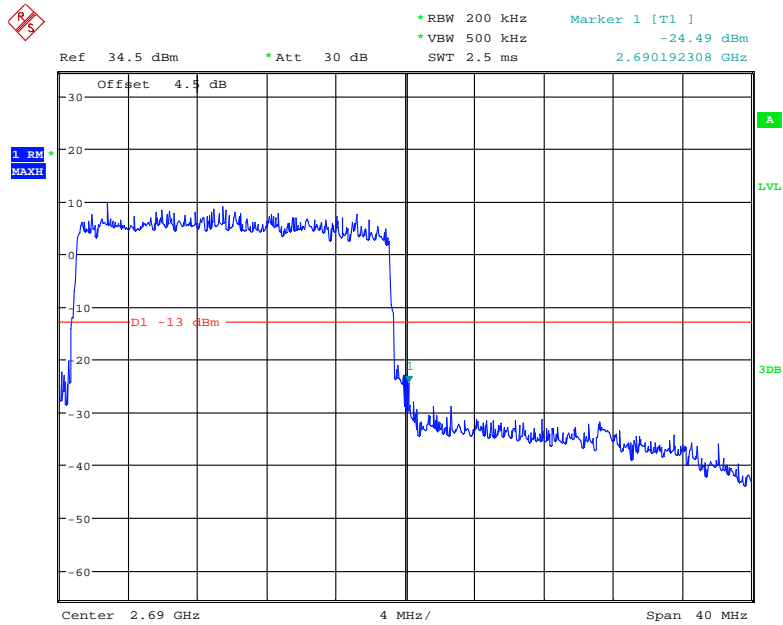
Date: 11.FEB.2018 15:18:11

### QPSK (20 MHz, FULL RB) - Left Band Edge



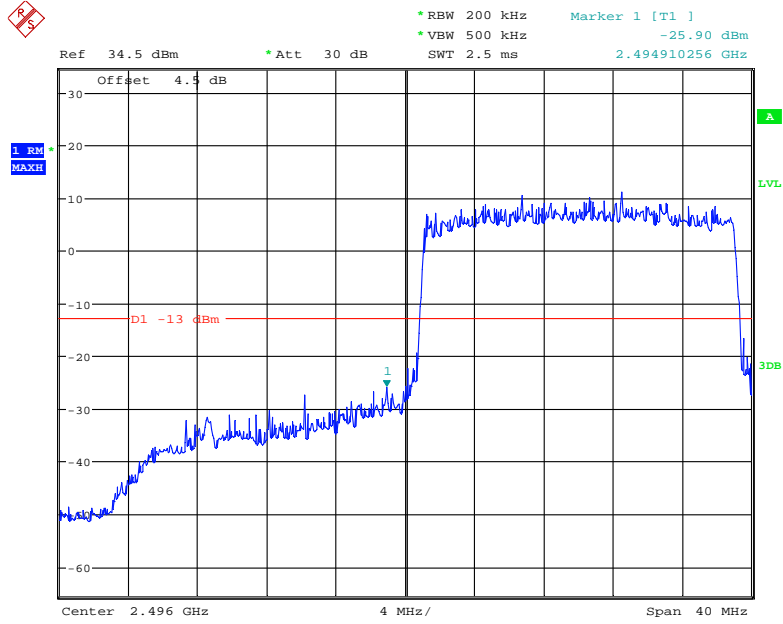
Date: 11.FEB.2018 15:09:41

### QPSK (20 MHz, FULL RB) - Right Band Edge



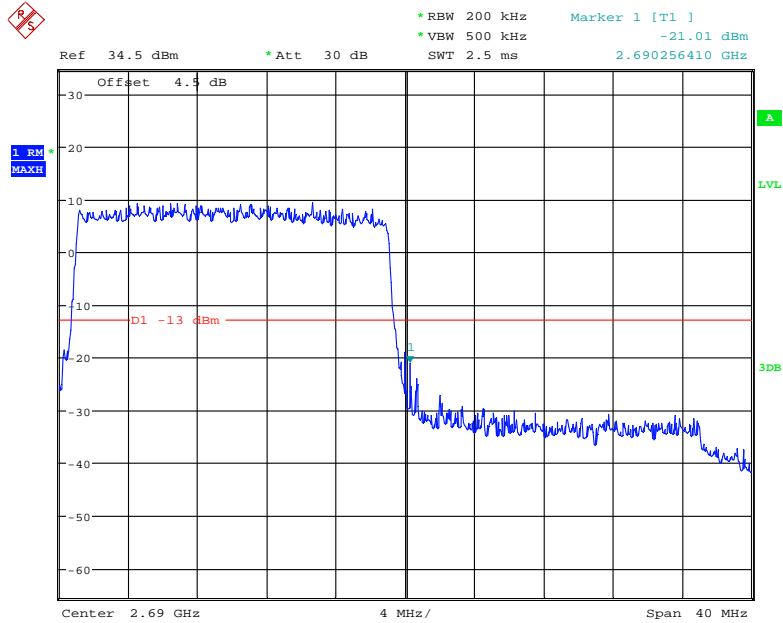
Date: 11.FEB.2018 15:12:25

### 16-QAM (20 MHz, FULL RB) - Left Band Edge



Date: 11.FEB.2018 15:10:26

### 16-QAM (20 MHz, FULL RB) - Right Band Edge



Date: 11.FEB.2018 15:11:19

**FCC § 2.1055; § 22.355; § 24.235; §27.54; §90.213- FREQUENCY STABILITY**

**Applicable Standard**

FCC § 2.1055, §22.355, §24.235, §27.54 and §90.213.

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

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

Frequency Tolerance for Transmitters in the Public Mobile Services

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

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

According to §90.213:

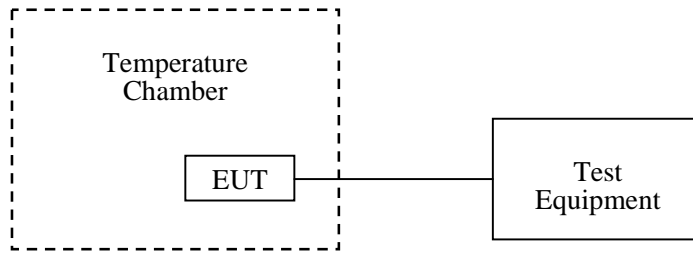
Frequency range (MHz)	Fixed and base stations	Mobile stations	
		Over 2 watts output power	2 watts or less output power
Below 25	1 2 3 100	100	200
25-50	20	20	50
72-76	5		50
150-174	5 11 5	6 5	4 6 50
216-220	1.0		1.0
220-222 <sup>12</sup>	0.1	1.5	1.5
421-512	7 11 14 2.5	8 5	8 5
806-809	14 1.0	1.5	1.5
809-824	14 1.5	2.5	2.5
851-854	1.0	1.5	1.5
854-869	1.5	2.5	2.5
896-901	14 0.1	1.5	1.5
902-928	2.5	2.5	2.5
902-928 <sup>13</sup>	2.5	2.5	2.5
929-930	1.5		
935-940	0.1	1.5	1.5
1427-1435	9 300	300	300
Above 2450 <sup>10</sup>			

**Test Procedure**

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

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

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



**Test Data**

**Environmental Conditions**

<b>Temperature:</b>	24 °C
<b>Relative Humidity:</b>	52 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Simon Wang from 2018-02-23 to 2018-04-18.*

*EUT operation mode: Transmitting*

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

**GSM Mode**

Middle Channel, $f_0 = 836.6\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	8	0.0096	2.5
-20		8	0.0096	2.5
-10		11	0.0131	2.5
0		10	0.0120	2.5
10		8	0.0096	2.5
20		-4	-0.0048	2.5
30		9	0.0108	2.5
40		11	0.0131	2.5
50		13	0.0155	2.5
25	V min.=6.4	12	0.0143	2.5

**EDGE Mode**

Middle Channel, $f_0 = 836.6\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	10	0.0120	2.5
-20		5	0.0060	2.5
-10		3	0.0036	2.5
0		2	0.0024	2.5
10		7	0.0084	2.5
20		15	0.0179	2.5
30		5	0.0060	2.5
40		7	0.0084	2.5
50		9	0.0108	2.5
25	V min.=6.4	6	0.0072	2.5

**WCDMA Mode**

Middle Channel, $f_0 = 836.6\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	3	0.0036	2.5
-20		2	0.0024	2.5
-10		-2	-0.0024	2.5
0		5	0.0060	2.5
10		3	0.0036	2.5
20		-1	-0.0012	2.5
30		2	0.0024	2.5
40		4	0.0048	2.5
50		2	0.0024	2.5
25	V min.=6.4	3	0.0036	2.5

**CDMA (1\*RTT , BC0) Mode**

Middle Channel, $f_0 = 836.52\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	-3	-0.0036	2.5
-20		-4	-0.0048	2.5
-10		-6	-0.0072	2.5
0		-2	-0.0024	2.5
10		-2	-0.0024	2.5
20		-7	-0.0084	2.5
30		-5	-0.0060	2.5
40		0	0.0000	2.5
25	V min.=6.4	-1	-0.0012	2.5

**CDMA (EV-DO, BC0) Mode**

Middle Channel, $f_0=836.52\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	-5	-0.0060	2.5
-20		-2	-0.0024	2.5
-10		-3	-0.0036	2.5
0		-3	-0.0036	2.5
10		-4	-0.0048	2.5
20		-6	-0.0072	2.5
30		-8	-0.0096	2.5
40		-7	-0.0084	2.5
25	V min.=6.4	-9	-0.0108	2.5



**PART 90**

**CDMA (1\*RTT , BC10) Mode**

Middle Channel, $f_0=820.5\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	-6	-0.0073	2.5
-20		-4	-0.0049	2.5
-10		-2	-0.0024	2.5
0		-3	-0.0037	2.5
10		-7	-0.0085	2.5
20		-5	-0.0061	2.5
30		-3	-0.0037	2.5
40		-7	-0.0085	2.5
25	V min.=6.4	-11	-0.0134	2.5

**CDMA (EV-DO , BC10) Mode**

Middle Channel, $f_0=820.5\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	-5	-0.0061	2.5
-20		-3	-0.0037	2.5
-10		-6	-0.0073	2.5
0		-7	-0.0085	2.5
10		-4	-0.0049	2.5
20		-2	-0.0024	2.5
30		-8	-0.0098	2.5
40		-12	-0.0146	2.5
25	V min.=6.4	-14	-0.0171	2.5

**PCS Band (Part 24E)**

**GSM Mode**

Middle Channel, f <sub>0</sub> =1880.0 MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	16	0.0085	pass
-20		-11	-0.0059	pass
-10		20	0.0106	pass
0		12	0.0064	pass
10		10	0.0053	pass
20		-11	-0.0059	pass
30		20	0.0106	pass
40		21	0.0112	pass
50		15	0.0080	pass
25	V min.=6.4	20	0.0106	pass

**EDGE Mode**

Middle Channel, f <sub>0</sub> =1880.0 MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	7	0.0037	pass
-20		-1	-0.0005	pass
-10		13	0.0069	pass
0		15	0.0080	pass
10		14	0.0074	pass
20		-1	-0.0005	pass
30		12	0.0064	pass
40		17	0.0090	pass
50		6	0.0032	pass
25	V min.=6.4	10	0.0053	pass

**CDMA (1\*RTT , BC1) Mode**

Middle Channel, $f_0=1880.0\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	-6	-0.0032	2.5
-20		-3	-0.0016	2.5
-10		-1	-0.0005	2.5
0		-7	-0.0037	2.5
10		-8	-0.0043	2.5
20		-9	-0.0048	2.5
30		-2	-0.0011	2.5
40		-10	-0.0053	2.5
25	V min.= 6.4	-4	-0.0021	2.5

**CDMA (EV-DO , BC1) Mode**

Middle Channel, $f_0=1880.0\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	-6	-0.0032	2.5
-20		-3	-0.0016	2.5
-10		-1	-0.0005	2.5
0		-7	-0.0037	2.5
10		-8	-0.0043	2.5
20		-9	-0.0048	2.5
30		-2	-0.0011	2.5
40		-10	-0.0053	2.5
25	V min.=6.4	-4	-0.0021	2.5

**WCDMA Mode**

Middle Channel, $f_0=1880.0$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	5	0.0027	pass
-20		6	0.0032	pass
-10		3	0.0016	pass
0		4	0.0021	pass
10		-3	-0.0016	pass
20		-2	-0.0011	pass
30		1	0.0005	pass
40		3	0.0016	pass
50		6	0.0032	pass
25	V min.=6.4	3	0.0016	pass

**AWS Band (Part 27)**

**WCDMA Mode**

Middle Channel, $f_0=1732.6$ MHz				
Temperature (°C)	Voltage Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	2	0.001154	pass
-20		-1	-0.000577	pass
-10		6	0.003463	pass
0		4	0.002309	pass
10		-3	-0.001732	pass
20		-2	-0.001154	pass
30		1	0.000577	pass
40		3	0.001732	pass
50		4	0.002309	pass
25	V min.=6.4	3	0.001732	pass

**LTE Band 2: QPSK**

10.0 MHz Middle Channel, $f_0 = 1880\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	-6.00	-0.00319	pass
-20		-3.00	-0.0016	pass
-10		-5.00	-0.00266	pass
0		1.00	0.000532	pass
10		-4.00	-0.00213	pass
20		-7.00	-0.00372	pass
30		2.00	0.001064	pass
40		5.00	0.00266	pass
50		-7.00	-0.00372	pass
25	V <sub>min.</sub> =6.4	3.00	0.001596	pass

**LTE Band 4: QPSK**

10.0 MHz Middle Channel, $f_0 = 1732.5\text{ MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	-6.00	-0.00346	pass
-20		-3.00	-0.00173	pass
-10		-5.00	-0.00289	pass
0		-4.00	-0.00231	pass
10		-2.00	-0.00115	pass
20		5.00	0.002886	pass
30		1.00	0.000577	pass
40		3.00	0.001732	pass
50		5.00	0.002886	pass
25	V <sub>min.</sub> = 6.4	-1.00	-0.00058	pass

**LTE Band 5: QPSK**

10.0 MHz Middle Channel, $f_o = 836.5$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	2.00	0.002391	2.5
-20		-3.00	-0.00359	2.5
-10		5.00	0.005977	2.5
0		3.00	0.003586	2.5
10		4.00	0.004782	2.5
20		-1.00	-0.0012	2.5
30		-1.00	-0.0012	2.5
40		-5.00	-0.00598	2.5
50		-7.00	-0.00837	2.5
25	V <sub>min</sub> = 6.4	-2.00	-0.00239	2.5

**LTE Band 7: QPSK**

10.0 MHz Middle Channel, $f_o = 2535$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	-9.00	-0.00355	pass
-20		6.00	0.002367	pass
-10		-5.00	-0.00197	pass
0		-7.00	-0.00276	pass
10		-3.00	-0.00118	pass
20		-2.00	-0.00079	pass
30		1.00	0.000394	pass
40		5.00	0.001972	pass
50		4.00	0.001578	pass
25	V <sub>min</sub> = 6.4	3.00	0.001183	pass

**LTE Band 12: QPSK**

10.0 MHz Middle Channel, $f_0=707.5$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	-8.00	-0.01131	2.5
-20		-2.00	-0.00283	2.5
-10		-5.00	-0.00707	2.5
0		-3.00	-0.00424	2.5
10		-4.00	-0.00565	2.5
20		5.00	0.007067	2.5
30		1.00	0.001413	2.5
40		5.00	0.007067	2.5
50		3.00	0.00424	2.5
25	V <sub>min</sub> = 6.4	-1.00	-0.00141	2.5

**LTE Band 13: QPSK**

10.0 MHz Middle Channel, $f_0=782$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	-0.86	-0.0011	pass
-20		-9.00	-0.01151	pass
-10		-7.43	-0.0095	pass
0		-5.81	-0.00743	pass
10		-1.90	-0.00243	pass
20		-0.73	-0.00093	pass
30		-7.74	-0.0099	pass
40		-2.57	-0.00329	pass
50		-1.02	-0.0013	pass
25	V <sub>min</sub> = 6.4	-1.00	-0.00128	pass

**LTE Band 17: QPSK**

10.0 MHz Middle Channel, $f_0 = 710$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	-8.00	-0.01127	pass
-20		-3.00	-0.00423	pass
-10		-5.00	-0.00704	pass
0		-1.00	-0.00141	pass
10		-7.00	-0.00986	pass
20		-1.20	-0.00169	pass
30		5.00	0.007042	pass
40		3.00	0.004225	pass
50		1.00	0.001408	pass
25	V <sub>min.</sub> = 6.4	-2.00	-0.00282	pass

**LTE Band 25: QPSK**

10.0 MHz Middle Channel, $f_0 = 1882.5$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	-6.00	-0.00319	pass
-20		-8.00	-0.00425	pass
-10		-2.00	-0.00106	pass
0		-4.00	-0.00212	pass
10		-3.00	-0.00159	pass
20		-2.00	-0.00106	pass
30		-5.00	-0.00266	pass
40		-7.00	-0.00372	pass
50		2.00	0.001062	pass
25	V <sub>min.</sub> = 6.4	1.00	0.000531	pass



**LTE Band 26: QPSK**

10.0 MHz Middle Channel, $f_0=819\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	-2.50	-0.00305	2.5
-20		-2.34	-0.00286	2.5
-10		-2.25	-0.00275	2.5
0		-2.67	-0.00326	2.5
10		-2.39	-0.00292	2.5
20		-2.15	-0.00263	2.5
30		-2.26	-0.00276	2.5
40		-2.28	-0.00278	2.5
50		-2.03	-0.00248	2.5
25	V <sub>min.</sub> =6.4	-2.43	-0.00297	2.5

**LTE Band 41: QPSK**

10.0 MHz Middle Channel, $f_0=2593\text{ MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	7.00	0.285714	pass
-20		-6.00	-0.333333	pass
-10		-4.00	-0.500000	pass
0		-3.00	-0.666667	pass
10		5.00	0.400000	pass
20		6.00	0.333333	pass
30		2.00	1.000000	pass
40		-6.00	-0.333330	pass
50		7.00	0.285714	pass
25	V <sub>min.</sub> = 6.4	5.00	0.400000	pass

**LTE Band 2: 16QAM**

10.0 MHz Middle Channel, $f_0 = 1880\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	-8.00	-0.00426	pass
-20		-6.92	-0.00368	pass
-10		-4.77	-0.00254	pass
0		-1.63	-0.00087	pass
10		-8.50	-0.00452	pass
20		-2.76	-0.00147	pass
30		-2.80	-0.00149	pass
40		-3.90	-0.00207	pass
50		-4.80	-0.00255	pass
25	V <sub>min.</sub> = 6.4	-2.00	-0.00106	pass

**LTE Band 4: 16QAM**

10.0 MHz Middle Channel, $f_0 = 1732.5\text{ MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	-5.80	-0.00335	pass
-20		-1.70	-0.00098	pass
-10		3.90	0.002251	pass
0		5.10	0.002944	pass
10		-1.90	-0.0011	pass
20		2.25	0.001299	pass
30		0.80	0.000462	pass
40		-1.20	-0.00069	pass
50		2.00	0.001154	pass
25	V <sub>min.</sub> = 6.4	3.00	0.001732	pass

**LTE Band 5: 16QAM**

10.0 MHz Middle Channel, $f_0=836.5$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	3.01	0.003598	2.5
-20		-1.08	-0.00129	2.5
-10		-5.05	-0.00604	2.5
0		-7.37	-0.00881	2.5
10		1.99	0.002379	2.5
20		2.94	0.003515	2.5
30		4.81	0.00575	2.5
40		3.57	0.004268	2.5
50		-2.68	-0.0032	2.5
25	V <sub>min</sub> = 6.4	-3.00	-0.00359	2.5

**LTE Band 7: 16QAM**

10.0 MHz Middle Channel, $f_0=2535$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	-9.60	-0.00379	pass
-20		-5.10	-0.00201	pass
-10		-1.50	-0.00059	pass
0		-4.60	-0.001810	pass
10		4.30	0.001696	pass
20		-1.38	-0.00054	pass
30		3.70	0.00146	pass
40		-2.40	-0.00095	pass
50		2.80	0.001105	pass
25	V <sub>min</sub> = 6.4	-2.00	-0.00079	pass

**LTE Band 12: 16QAM**

10.0 MHz Middle Channel, $f_0 = 707.5$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	-4.70	-0.00664	2.5
-20		-8.20	-0.01159	2.5
-10		-1.30	-0.00184	2.5
0		-5.90	-0.00834	2.5
10		7.30	0.010318	2.5
20		-3.94	-0.00557	2.5
30		5.60	0.007915	2.5
40		3.88	0.005484	2.5
50		4.12	0.005823	2.5
25	V <sub>min.</sub> = 6.4	-4.00	-0.00565	2.5

**LTE Band 13: 16QAM**

10.0 MHz Middle Channel, $f_0 = 782$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	-2.40	-0.00307	pass
-20		-4.80	-0.00614	pass
-10		3.20	0.004092	pass
0		1.80	0.002302	pass
10		0.90	0.001151	pass
20		-1.98	-0.00253	pass
30		-5.20	-0.00665	pass
40		-4.90	-0.00627	pass
50		-1.30	-0.00166	pass
25	V <sub>min.</sub> = 6.4	-1.00	-0.00128	pass

**LTE Band 17: 16QAM**

10.0 MHz Middle Channel, $f_0 = 710$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	2.40	0.00338	pass
-20		4.98	0.007014	pass
-10		-2.37	-0.00334	pass
0		-4.56	-0.00642	pass
10		-1.78	-0.00251	pass
20		0.39	0.000549	pass
30		1.98	0.002789	pass
40		3.08	0.004338	pass
50		-4.24	-0.00597	pass
25	V <sub>min</sub> = 6.4	-2.00	-0.00282	pass

**LTE Band 25: 16QAM**

10.0 MHz Middle Channel, $f_0 = 1882.5$ MHz				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	8.92	0.004738	pass
-20		5.30	0.002815	pass
-10		3.94	0.002093	pass
0		5.06	0.002688	pass
10		-1.37	-0.00073	pass
20		1.34	0.000712	pass
30		4.93	0.002619	pass
40		-3.67	-0.001950	pass
50		2.57	0.001365	pass
25	V <sub>min</sub> = 6.4	-5.00	-0.002660	pass

**LTE Band 26: 16QAM**

10.0 MHz Middle Channel, $f_0=819\text{MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	7.6	-2.34	-0.002857	2.5
-20		-1.96	-0.002393	2.5
-10		-2.05	-0.002503	2.5
0		-2.45	-0.002991	2.5
10		-2.63	-0.003211	2.5
20		-2.15	-0.002625	2.5
30		-2.20	-0.002686	2.5
40		-2.32	-0.002833	2.5
50		-2.18	-0.002662	2.5
25	V <sub>min.</sub> = 6.4	-2.70	-0.003297	2.5

**LTE Band 41: 16QAM**

10.0 MHz Middle Channel, $f_0=2593\text{ MHz}$				
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	7.6	4.00	0.50000	pass
-20		5.00	0.40000	pass
-10		-3.00	-0.66667	pass
0		3.00	0.666667	pass
10		7.00	0.285714	pass
20		7.00	0.285714	pass
30		-3.00	-0.66667	pass
40		-4.00	-0.50000	pass
50		-3.00	-0.66667	pass
25	V <sub>min.</sub> = 6.4	-5.00	-0.40000	pass

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