



TESTING LABORATORY
CERTIFICATE #4820.01



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

For

Shenzhen Inrico Electronics Co.,Ltd

3/F, Building No.118, High Tech Industrial Park, 72 Guowei Road, Luohu District, Shenzhen

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Reviewed By:	Ivan Cao Assistant Manager 
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:		Smart Phone
EUT Model:		S100
Multiple Model:		PU1Z81WAA15A
Operation modes:		GSM Voice, GPRS(Class 10)/EDGE(Class 10) Data, WCDMA(R99 (Voice+Data), HSDPA,HSUPA,DC-HSDPA, HSPA+) FDD-LTE,TDD-LTE
Modulation Type:		GMSK, 8PSK, BPSK, QPSK, 16QAM
Rated Input Voltage:		DC 3.8V from battery or DC 5V from adapter
Adapter Information	Model:	HJ-0502000W2-US
	Input:	100-240V~50/60Hz 0.3A
	Output:	DC 5V 2000mA
Serial Number:		RDG200601009-RF -RF-S1
EUT Received Date:		2020.06.01
EUT Received Status:		Good

Objective

This report is prepared on behalf of ***Shenzhen Inrico Electronics Co.,Ltd*** in accordance with: Part 2-Subpart J, Part 22-Subpart H, Part 24-Subpart E, Part 27of the Federal Communications Commission's rules.

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

Related Submittal(s)/Grant(s)

No related submittal.

Test Methodology

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

Part 22 Subpart H - Public Mobile Services
Part 24 Subpart E - Personal Communication Services
Part 27 – Miscellaneous wireless communications services

Applicable Standards: TIA-603-E-2016.

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

Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	$\pm 5\%$
RF output power, conducted	± 0.61 dB
Unwanted Emissions, radiated	30MHz ~ 1GHz: 5.85 dB 1G~26.5GHz: 5.23 dB
Unwanted Emissions, conducted	± 1.5 dB
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 0.4\%$
Duty Cycle	1%

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Test Facility

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

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “ $\triangle$ ”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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SYSTEM TEST CONFIGURATION

Justification

The EUT was configured for testing according to TIA-603-E-2016.

The test items were performed with the EUT operating at testing mode. The device operates on GSM Band 850/1900MHz, WCDMA Band 2/4/5, and LTE band 2/4/5/7/12/17/38/40, test was performed with channels as below table:

Frequency Bands	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM/GPRS/EDGE 850	0.25	824.2	836.6	848.8
GSM/GPRS/EDGE 1900	0.25	1850.2	1880	1909.8
WCDMA Band 2	4.2	1852.4	1880	1907.6
WCDMA Band 4	4.2	1712.4	1732.6	1752.6
WCDMA Band 5	4.2	826.4	836.6	846.6
LTE Band 2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE Band 4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE Band 5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829	836.5	844
LTE Band 7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560
LTE Band 12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704	707.5	711
LTE Band 17	5	706.5	710	713.5
	10	709	710	711
LTE Band 38	5	2572.5	2595	2617.5
	10	2575	2595	2615
	15	2577.5	2595	2612.5
	20	2580	2595	2610
LTE Band 40 Lower 2305-2315MHz	5	2307.5	2310	2312.5
	10	/	2310	/
LTE Band 40 Upper 2350-2360MHz	5	2352.5	2355	2357.5
	10	/	2355	/

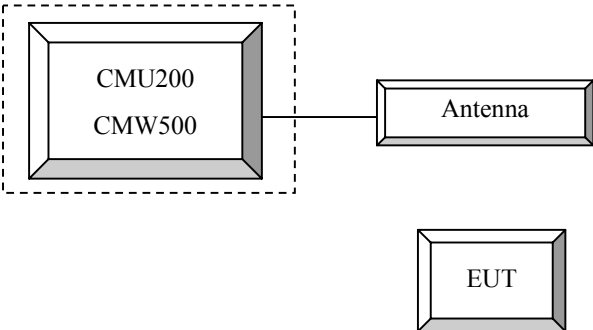
Equipment Modifications

No modification was made to the EUT.

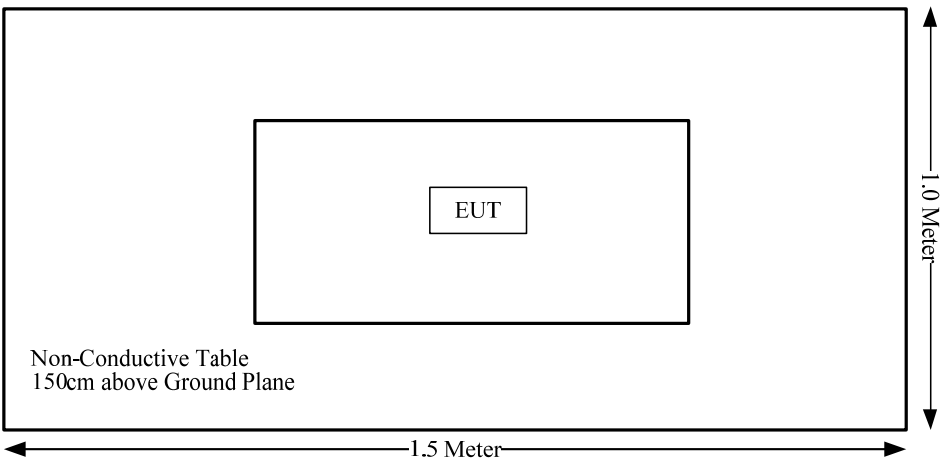
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
R&S	Universal Radio Communication Tester	CMU200	106 891
R&S	Wideband Radio Communication Tester	CMW500	147473
Un-Known	ANTENNA	Un-Known	Un-Known

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

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

FCC §1.1310 & §2.1093- RF EXPOSURE

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: RDG200601009-20.

FCC §2.1047 - MODULATION CHARACTERISTIC

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

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

Applicable Standard

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

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

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

According to §27.50

(a)(3) Mobile and portable stations. (i) For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

(b)(10) 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.

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

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

(h),(2) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

Test Procedure

GSM/GPRS/EGPRS

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

Press Connection control to choose the different menus

Press RESET > choose all the reset all settings

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

Network Support > GSM + GPRS or GSM + EGSM

Main Service > Packet Data

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

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

> Slot configuration > Uplink/Gamma

> 33 dBm for GPRS 850

> 30 dBm for GPRS 1900

> 27 dBm for EGPRS 850

> 26 dBm for EGPRS 1900

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

Frequency Offset > + 0 Hz

Mode > BCCH and TCH

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

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

Channel Type > Off

P0 > 4 dB

Slot Config > Unchanged (if already set under MS signal)

TCH > choose desired test channel

Hopping > Off

Main Timeslot > 3

Network Coding Scheme > CS4 (GPRS) and MCS5 (EGPRS)

Bit Stream > 2E9-1 PSR Bit Stream

AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input

Connection Press Signal on to turn on the signal and change settings

WCDMA-Release 99

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

WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c / β_d	8/15

WCDMA HSDPA

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

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subset	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	β_d (SF)	64			
	β_c / β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
	MPR(dB)	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	$A_{hs} = \beta_{hs} / \beta_c$	30/15			

WCDMA HSUPA

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

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

HSPA+

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

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

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

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

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

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

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

DC-HSDPA

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

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

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

LTE (FDD):

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

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

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

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

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

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

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

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3	13	10	Table 6.2.4-2	Table 6.2.4-2
	6.6.3.3.2				
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

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

LTE(TDD):

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink		Extended cyclic prefix in downlink	
	DwPTS	UpPTS	DwPTS	UpPTS
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink	
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$
2	$21952 \cdot T_s$			$23040 \cdot T_s$
3	$24144 \cdot T_s$			$25600 \cdot T_s$
4	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$
6	$19760 \cdot T_s$			$23040 \cdot T_s$
7	$21952 \cdot T_s$			$12800 \cdot T_s$
8	$24144 \cdot T_s$			-
9	$13168 \cdot T_s$			-

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Calculated Duty Cycle

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

Calculated Duty Cycle = Extended cyclic prefix in uplink $\times (T_s) \times \#$ of S + $\#$ of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle = $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$

where

$T_s = 1/(15000 \times 2048)$ seconds

Radiated method:

TIA-603-E-2016 section 2.2.17

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
ERP/EIRP Test					
Sunol Sciences	Antenna	JB3	A060611-1	2017-11-10	2020-11-10
R&S	EMI Test Receiver	ESR3	102453	2019-09-12	2020-09-12
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2019-09-05	2020-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2019-09-05	2020-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-1400-01	2020-05-06	2021-05-06
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-02	2019-09-05	2020-09-05
Agilent	Signal Generator	E8247C	MY43321350	2019-12-10	2020-12-10
ETS-Lindgren	Horn Antenna	3115	000 527 35	2018-10-12	2021-10-12
Agilent	Spectrum Analyzer	E4440A	SG43360054	2020-05-09	2021-05-09
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2019-09-05	2020-09-05
TDK RF	Horn Antenna	HRN-0118	130 084	2018-10-12	2021-10-12
Conducted Output Power Test					
R&S	Universal Radio Communication Tester	CMU200	106 891	2019-12-14	2020-12-14
R&S	Wideband Radio Communication Tester	CMW500	147473	2019-08-03	2020-08-03
E-Microwave	Coaxial Attenuators	EMCA10-5RN-6	OE01203239	Each time	/
Unknown	Coaxial Cable	C-SJ00-0010	C0010/03	Each time	/

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

Test Data**Environmental Conditions**

Test Items:	Radiation Below 1GHz	Radiation Above 1GHz	Conducted Output Power
Temperature:	25.5°C	25.6°C	27.1 °C
Relative Humidity:	53%	56%	68 %
ATM Pressure:	100.1kPa	100.1kPa	100.8kPa
Tester:	Joker Chen	Bond Qin	Rita Huang
Test Date:	2020-06-10	2020-06-10	2020-06-05

Test Result: Compliance

Conducted Output Power**Cellular Band & PCS Band**

Band	Channel No.	Conducted Peak Output Power (dBm)				
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slots	EGPRS 1 TX Slot	EGPRS 2 TX Slots
Cellular	128	32.00	32.11	31.35	26.39	25.31
	190	31.80	31.99	31.24	26.42	25.34
	251	32.30	32.03	31.26	26.47	25.42
PCS	512	29.50	29.38	28.36	25.28	24.33
	661	29.10	28.95	27.99	24.61	23.62
	810	29.40	29.48	28.59	25.01	23.97

WCDMA Band 2

Mode	3GPP Sub Test	Low Channel		Middle Channel		High Channel	
		Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)
Rel 99	1	22.12	2.23	22.03	2.14	21.86	1.62
HSDPA	1	21.99	3.48	21.92	2.72	21.82	2.99
	2	21.48	3.45	21.41	2.51	21.34	2.72
	3	21.03	3.48	20.93	2.33	20.83	2.51
	4	20.55	3.54	20.42	2.45	20.35	2.54
HSUPA	1	21.83	3.28	21.88	3.48	21.79	2.87
	2	21.44	3.46	21.43	3.66	21.38	2.72
	3	21.05	3.52	21.01	3.45	20.99	2.54
	4	20.60	3.67	20.62	3.33	20.54	2.69
	5	20.15	3.70	20.23	3.15	20.12	2.90
DC-HSDPA	1	21.76	3.38	21.81	3.55	21.79	3.68
	2	21.37	3.32	21.39	3.58	21.40	3.53
	3	20.98	3.20	20.94	3.52	20.95	3.65
	4	20.56	3.20	20.49	3.49	20.50	3.44
HSPA+ (16QAM)	1	20.88	3.44	20.76	3.52	20.55	3.20

WCDMA Band 4

Mode	3GPP Sub Test	Low Channel		Middle Channel		High Channel	
		Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)
Rel 99	1	21.95	2.81	21.86	2.87	21.94	2.32
HSDPA	1	21.87	3.22	21.74	3.19	21.83	2.72
	2	21.36	3.25	21.26	3.19	21.32	2.60
	3	20.88	3.28	20.81	3.34	20.84	2.63
	4	20.37	3.16	20.30	3.34	20.36	2.78
HSUPA	1	21.77	3.16	21.66	3.25	21.72	3.33
	2	21.38	3.04	21.24	3.19	21.30	3.39
	3	20.93	2.95	20.85	3.31	20.85	3.21
	4	20.48	3.13	20.43	3.52	20.46	3.45
	5	20.06	2.86	20.01	3.58	20.01	3.39
DC-HSDPA	1	21.55	3.21	21.61	3.52	21.68	3.24
	2	21.10	3.15	21.22	3.67	21.23	3.42
	3	20.65	3.00	20.80	3.67	20.84	3.30
	4	20.23	3.21	20.41	3.88	20.42	3.12
HSPA+ (16QAM)	1	20.79	3.03	20.93	3.76	20.86	3.18

WCDMA Band 5

Mode	3GPP Sub Test	Low Channel		Middle Channel		High Channel	
		Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)	Ave. Power (dBm)	PAR (dB)
Rel 99	1	22.67	2.99	22.58	2.84	22.56	2.96
HSDPA	1	21.82	3.51	21.79	3.97	21.77	4.00
	2	21.34	3.39	21.31	4.06	21.26	4.03
	3	20.89	3.57	20.83	4.03	20.81	4.03
	4	20.44	3.84	20.35	4.12	20.33	4.06
HSUPA	1	21.28	3.22	21.25	3.25	21.26	3.25
	2	20.89	3.16	20.86	3.04	20.81	3.25
	3	20.50	3.01	20.41	3.01	20.36	3.19
	4	20.11	3.01	19.96	3.16	19.91	3.37
	5	19.66	2.92	19.57	3.07	19.46	3.58
DC-HSDPA	1	21.25	2.83	21.23	3.10	21.22	3.79
	2	20.80	3.07	20.78	3.28	20.77	3.85
	3	20.29	2.92	20.27	3.16	20.32	3.91
	4	19.84	3.01	19.76	3.34	19.87	3.76
HSPA+ (16QAM)	1	20.45	3.13	20.66	3.43	20.48	4.03

LTE Band 2

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4MHz	QPSK	RB1#0	25.34	24.58	24.83
		RB1#3	25.51	24.36	25.07
		RB1#5	25.32	24.04	24.87
		RB3#0	25.14	24.08	24.69
		RB3#3	24.92	24.05	24.70
		RB6#0	24.27	23.10	23.91
	16QAM	RB1#0	23.86	22.97	23.75
		RB1#3	24.00	23.10	23.92
		RB1#5	23.77	22.92	23.81
		RB3#0	23.91	23.23	23.56
		RB3#3	23.86	23.19	23.59
		RB6#0	22.98	22.11	22.83
3MHz	QPSK	RB1#0	24.86	24.25	24.92
		RB1#8	24.88	24.17	25.00
		RB1#14	24.88	24.12	25.03
		RB6#0	23.80	23.16	23.80
		RB6#9	23.85	23.07	23.94
		RB15#0	23.81	23.12	22.06
	16QAM	RB1#0	24.17	23.25	22.03
		RB1#8	24.22	23.17	21.99
		RB1#14	24.24	23.13	21.95
		RB6#0	22.84	22.14	20.99
		RB6#9	22.87	22.09	20.93
		RB15#0	22.89	22.08	21.07
5MHz	QPSK	RB1#0	22.99	22.96	23.03
		RB1#13	23.11	23.12	23.23
		RB1#24	22.93	23.00	23.09
		RB15#0	22.07	22.06	22.12
		RB15#10	22.03	22.03	22.03
		RB25#0	21.97	22.02	21.99
	16QAM	RB1#0	21.73	22.14	21.95
		RB1#13	21.89	22.27	22.08
		RB1#24	21.75	22.14	21.91
		RB15#0	21.07	21.09	21.12
		RB15#10	21.09	21.04	21.00
		RB25#0	21.08	21.04	20.99

10MHz	QPSK	RB1#0	23.06	23.05	23.11
		RB1#25	23.23	23.20	23.32
		RB1#49	23.02	23.10	23.20
		RB25#0	22.03	22.08	22.08
		RB25#25	22.12	22.03	22.00
		RB50#0	22.06	22.06	22.00
	16QAM	RB1#0	22.41	22.06	21.95
		RB1#25	22.53	22.22	22.19
		RB1#49	22.44	22.08	21.94
		RB25#0	21.13	21.12	21.16
		RB25#25	21.15	21.07	21.05
		RB50#0	21.09	21.07	21.06
15MHz	QPSK	RB1#0	23.01	22.97	23.05
		RB1#38	23.06	23.10	23.17
		RB1#74	22.93	23.00	23.14
		RB36#0	22.15	22.19	22.20
		RB36#39	22.18	22.15	22.21
		RB75#0	22.20	22.17	22.21
	16QAM	RB1#0	22.32	21.99	22.25
		RB1#38	22.50	22.11	22.31
		RB1#74	22.36	22.00	22.11
		RB36#0	21.13	21.14	21.16
		RB36#39	21.17	21.18	21.13
		RB75#0	21.17	21.16	21.12
20MHz	QPSK	RB1#0	22.82	22.75	22.84
		RB1#50	23.28	23.17	23.27
		RB1#99	22.84	22.82	22.97
		RB50#0	21.98	22.06	22.07
		RB50#50	22.03	22.01	21.98
		RB100#0	22.01	22.02	22.03
	16QAM	RB1#0	21.90	22.25	22.04
		RB1#50	22.34	22.63	22.48
		RB1#99	21.92	22.24	21.99
		RB50#0	21.03	21.10	21.13
		RB50#50	21.09	21.00	21.00
		RB100#0	21.08	21.07	21.07

LTE Band 4

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4MHz	QPSK	RB1#0	23.04	22.96	23.03
		RB1#3	23.15	23.16	23.24
		RB1#5	23.00	22.98	23.06
		RB3#0	23.06	23.05	23.00
		RB3#3	23.07	23.00	22.97
		RB6#0	22.09	22.00	22.09
	16QAM	RB1#0	22.08	21.92	22.01
		RB1#3	22.14	22.10	22.15
		RB1#5	21.98	21.92	21.90
		RB3#0	22.13	22.22	21.89
		RB3#3	22.12	22.25	21.94
		RB6#0	21.04	21.06	21.08
3MHz	QPSK	RB1#0	22.99	22.99	23.10
		RB1#8	23.01	23.01	23.10
		RB1#14	22.96	22.97	23.05
		RB6#0	21.94	21.91	21.99
		RB6#9	21.92	21.94	21.98
		RB15#0	21.97	21.97	21.95
	16QAM	RB1#0	22.48	22.08	21.94
		RB1#8	22.43	22.12	21.90
		RB1#14	22.43	22.09	21.89
		RB6#0	21.03	20.97	20.91
		RB6#9	21.04	21.05	20.86
		RB15#0	21.11	21.01	21.00
5MHz	QPSK	RB1#0	22.92	22.89	23.27
		RB1#13	23.00	23.03	23.47
		RB1#24	22.86	22.89	23.33
		RB15#0	21.99	22.01	22.44
		RB15#10	21.99	21.99	22.42
		RB25#0	21.95	21.94	22.32
	16QAM	RB1#0	21.74	22.51	22.08
		RB1#13	21.87	22.25	22.21
		RB1#24	21.72	22.12	22.09
		RB15#0	21.11	21.51	21.46
		RB15#10	21.10	21.49	21.43
		RB25#0	21.06	21.47	21.39
10MHz	QPSK	RB1#0	23.40	22.86	22.92
		RB1#25	23.57	23.05	23.10
		RB1#49	23.29	22.95	22.96
		RB25#0	22.29	21.93	21.91
		RB25#25	22.26	21.94	21.84
		RB50#0	22.01	21.91	21.86
	16QAM	RB1#0	22.37	21.97	21.84
		RB1#25	22.54	22.23	21.97
		RB1#49	22.44	22.01	21.83
		RB25#0	20.97	21.02	20.99
		RB25#25	21.09	21.05	20.96
		RB50#0	21.03	21.03	20.90

15MHz	QPSK	RB1#0	22.82	22.80	22.84
		RB1#38	22.86	22.91	22.97
		RB1#74	22.79	22.86	22.90
		RB36#0	21.94	21.94	21.98
		RB36#39	21.92	21.99	22.06
		RB75#0	21.94	21.99	22.04
	16QAM	RB1#0	22.34	21.91	22.08
		RB1#38	22.41	21.97	22.15
		RB1#74	22.37	21.91	22.05
		RB36#0	20.99	21.01	20.99
		RB36#39	21.02	21.04	20.96
		RB75#0	20.99	21.02	20.94
20MHz	QPSK	RB1#0	22.66	22.62	22.64
		RB1#50	23.00	23.11	23.03
		RB1#99	22.70	22.68	22.68
		RB50#0	21.85	21.88	21.82
		RB50#50	21.84	21.88	21.85
		RB100#0	21.85	21.87	21.87
	16QAM	RB1#0	21.92	21.82	22.14
		RB1#50	22.28	22.20	22.44
		RB1#99	21.95	21.83	22.05
		RB50#0	20.87	20.95	20.91
		RB50#50	20.92	20.91	20.89
		RB100#0	20.96	20.93	20.93

LTE Band 5

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4MHz	QPSK	RB1#0	23.03	23.15	23.12
		RB1#3	23.23	23.31	23.32
		RB1#5	23.05	23.13	23.14
		RB3#0	23.12	23.19	23.10
		RB3#3	23.08	23.18	23.12
		RB6#0	22.13	22.27	22.13
	16QAM	RB1#0	22.09	22.24	22.06
		RB1#3	22.25	22.44	22.24
		RB1#5	22.08	22.24	22.08
		RB3#0	22.34	22.16	22.20
		RB3#3	22.34	22.19	22.17
		RB6#0	21.13	21.21	21.11
3MHz	QPSK	RB1#0	23.12	23.21	23.19
		RB1#8	23.06	23.19	23.17
		RB1#14	23.12	23.17	23.19
		RB6#0	22.10	22.21	22.07
		RB6#9	22.09	22.16	22.10
		RB15#0	22.15	22.22	22.14
	16QAM	RB1#0	22.65	22.29	22.16
		RB1#8	22.64	22.30	22.13
		RB1#14	22.71	22.28	22.10
		RB6#0	21.12	21.15	21.09
		RB6#9	21.15	21.19	21.03
		RB15#0	21.21	21.18	21.24
5MHz	QPSK	RB1#0	23.07	23.14	23.10
		RB1#13	23.25	23.25	23.21
		RB1#24	23.14	23.09	23.10
		RB15#0	22.20	22.24	22.24
		RB15#10	22.26	22.25	22.17
		RB25#0	22.20	22.20	22.12
	16QAM	RB1#0	22.02	22.41	22.14
		RB1#13	22.17	22.49	22.23
		RB1#24	22.03	22.36	22.07
		RB15#0	21.25	21.18	21.33
		RB15#10	21.30	21.21	21.25
		RB25#0	21.25	21.17	21.23
10MHz	QPSK	RB1#0	23.13	23.22	23.20
		RB1#25	23.37	23.36	23.35
		RB1#49	23.20	23.23	23.20
		RB25#0	22.25	22.26	22.28
		RB25#25	22.29	22.31	22.19
		RB50#0	22.28	22.29	22.23
	16QAM	RB1#0	22.70	22.34	22.19
		RB1#25	22.95	22.49	22.33
		RB1#49	22.67	22.33	22.10
		RB25#0	21.30	21.28	21.31
		RB25#25	21.34	21.32	21.36
		RB50#0	21.24	21.26	21.30

LTE Band 7

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5 MHz	QPSK	RB1#0	22.77	22.72	22.82
		RB1#13	22.86	22.83	22.94
		RB1#24	22.74	22.73	22.85
		RB15#0	21.81	21.82	21.91
		RB15#10	21.82	21.80	21.92
		RB25#0	21.78	21.80	21.85
	16QAM	RB1#0	21.60	21.99	21.80
		RB1#13	21.67	22.06	21.90
		RB1#24	21.57	21.92	21.80
		RB15#0	20.87	20.74	20.85
		RB15#10	20.91	20.72	20.87
10 MHz	QPSK	RB1#0	22.86	22.83	22.90
		RB1#25	22.99	22.96	23.08
		RB1#49	22.82	22.75	23.03
		RB25#0	21.85	21.81	21.87
		RB25#25	21.89	21.85	21.95
		RB50#0	21.82	21.80	21.90
	16QAM	RB1#0	22.28	21.92	21.78
		RB1#25	22.42	22.01	21.96
		RB1#49	22.25	21.86	21.79
		RB25#0	20.92	20.82	20.90
		RB25#25	20.92	20.82	20.98
15 MHz	QPSK	RB1#0	22.76	22.75	22.77
		RB1#38	22.82	22.90	22.94
		RB1#74	22.67	22.68	22.91
		RB36#0	21.89	21.83	21.96
		RB36#39	21.85	21.88	22.01
		RB75#0	21.86	21.89	22.03
	16QAM	RB1#0	22.18	21.81	22.05
		RB1#38	22.26	21.88	22.21
		RB1#74	22.12	21.72	21.92
		RB36#0	20.89	20.83	20.96
		RB36#39	20.87	20.87	21.03
20MHz	QPSK	RB1#0	22.69	22.71	22.64
		RB1#50	23.03	23.14	23.05
		RB1#99	22.73	22.65	22.74
		RB50#0	21.80	21.82	21.91
		RB50#50	21.91	21.90	21.95
		RB100#0	21.85	21.86	21.93
	16QAM	RB1#0	21.89	21.88	22.08
		RB1#50	22.30	22.23	22.52
		RB1#99	21.97	21.76	22.14
		RB50#0	20.83	20.69	20.83
		RB50#50	20.88	20.84	20.88
	QPSK	RB1#0	22.69	22.71	22.64
		RB1#50	23.03	23.14	23.05
		RB1#99	22.73	22.65	22.74
		RB50#0	21.80	21.82	21.91
		RB50#50	21.91	21.90	21.95
		RB100#0	21.85	21.86	21.93
	16QAM	RB1#0	21.89	21.88	22.08
		RB1#50	22.30	22.23	22.52
		RB1#99	21.97	21.76	22.14
		RB50#0	20.83	20.69	20.83
		RB50#50	20.88	20.84	20.88

LTE Band 12

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4MHz	QPSK	RB1#0	23.25	23.31	23.28
		RB1#3	23.44	23.51	23.52
		RB1#5	23.27	23.36	23.29
		RB3#0	23.35	23.46	23.36
		RB3#3	23.36	23.39	23.43
		RB6#0	22.30	22.39	22.38
	16QAM	RB1#0	22.28	22.43	22.29
		RB1#3	22.43	22.66	22.49
		RB1#5	22.30	22.49	22.32
		RB3#0	22.62	22.48	22.53
		RB3#3	22.62	22.48	22.51
		RB6#0	21.34	21.39	21.29
3MHz	QPSK	RB1#0	23.31	23.39	23.33
		RB1#8	23.30	23.35	23.33
		RB1#14	23.30	23.33	23.36
		RB6#0	22.21	22.22	22.28
		RB6#9	22.19	22.20	22.32
		RB15#0	22.35	22.36	22.36
	16QAM	RB1#0	22.92	22.54	22.38
		RB1#8	22.85	22.51	22.34
		RB1#14	22.92	22.49	22.33
		RB6#0	21.31	21.31	21.25
		RB6#9	21.32	21.34	21.22
		RB15#0	21.38	21.35	21.44
5MHz	QPSK	RB1#0	23.23	23.31	23.25
		RB1#13	23.36	23.40	23.35
		RB1#24	23.30	23.30	23.28
		RB15#0	22.29	22.40	22.42
		RB15#10	22.35	22.36	22.41
		RB25#0	22.32	22.33	22.33
	16QAM	RB1#0	22.11	22.61	22.35
		RB1#13	22.23	22.70	22.41
		RB1#24	22.18	22.61	22.35
		RB15#0	21.39	21.39	21.45
		RB15#10	21.41	21.34	21.40
		RB25#0	21.38	21.38	21.41
10MHz	QPSK	RB1#0	23.27	23.33	23.32
		RB1#25	23.38	23.48	23.40
		RB1#49	23.29	23.28	23.41
		RB25#0	22.35	22.45	22.39
		RB25#25	22.39	22.43	22.37
		RB50#0	22.35	22.47	22.38
	16QAM	RB1#0	22.86	22.49	22.40
		RB1#25	23.03	22.58	22.46
		RB1#49	22.95	22.44	22.33
		RB25#0	21.44	21.51	21.52
		RB25#25	21.46	21.52	21.43
		RB50#0	21.37	21.44	21.42

LTE Band 17

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5 MHz	QPSK	RB1#0	23.25	23.29	23.28
		RB1#13	23.41	23.41	23.33
		RB1#24	23.25	23.26	23.26
		RB15#0	22.42	22.31	22.42
		RB15#10	22.37	22.38	22.35
		RB25#0	22.38	22.33	22.35
	16QAM	RB1#0	22.14	22.59	22.36
		RB1#13	22.31	22.70	22.44
		RB1#24	22.14	22.54	22.29
		RB15#0	21.51	21.33	21.43
		RB15#10	21.45	21.38	21.40
		RB25#0	21.46	21.38	21.39
10 MHz	QPSK	RB1#0	23.27	23.35	23.40
		RB1#25	23.49	23.57	23.52
		RB1#49	23.26	23.32	23.36
		RB25#0	22.48	22.48	22.41
		RB25#25	22.76	22.43	22.35
		RB50#0	22.47	22.48	22.40
	16QAM	RB1#0	22.32	22.98	22.50
		RB1#25	22.54	23.17	22.72
		RB1#49	22.31	22.90	22.51
		RB25#0	21.58	21.54	21.51
		RB25#25	21.57	21.50	21.41
		RB50#0	21.49	21.50	21.43

LTE Band 38

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5MHz	QPSK	RB1#0	24.17	24.57	24.58
		RB1#13	24.26	24.67	24.69
		RB1#24	24.15	24.43	24.50
		RB15#0	23.17	23.61	23.62
		RB15#10	23.18	23.62	23.64
		RB25#0	23.17	23.65	23.63
	16QAM	RB1#0	23.19	23.58	23.54
		RB1#13	23.40	23.68	23.67
		RB1#24	23.36	23.53	23.48
		RB15#0	22.35	22.54	22.56
		RB15#10	22.56	22.53	22.57
		RB25#0	22.60	22.57	22.57
10MHz	QPSK	RB1#0	24.70	24.75	24.68
		RB1#25	24.97	24.98	24.99
		RB1#49	24.70	24.66	24.61
		RB25#0	23.76	23.74	23.64
		RB25#25	23.75	23.67	23.72
		RB50#0	23.73	23.73	23.69
	16QAM	RB1#0	23.82	23.55	23.70
		RB1#25	24.09	23.83	23.96
		RB1#49	23.82	23.52	23.62
		RB25#0	22.63	22.68	22.64
		RB25#25	22.66	22.68	22.68
		RB50#0	22.63	22.62	22.64
15MHz	QPSK	RB1#0	24.63	24.65	24.60
		RB1#38	24.74	24.73	24.68
		RB1#74	24.60	24.56	24.53
		RB36#0	23.70	23.73	23.66
		RB36#39	23.68	23.66	23.69
		RB75#0	23.76	23.71	23.70
	16QAM	RB1#0	23.75	23.51	23.68
		RB1#38	23.80	23.59	23.81
		RB1#74	23.72	23.41	23.63
		RB36#0	22.59	22.64	22.67
		RB36#39	22.61	22.61	22.74
		RB75#0	22.59	22.63	22.62
20MHz	QPSK	RB1#0	24.49	24.46	24.50
		RB1#50	24.91	24.89	24.97
		RB1#99	24.47	24.39	24.41
		RB50#0	23.65	23.59	23.59
		RB50#50	23.66	23.61	23.69
		RB100#0	23.64	23.62	23.60
	16QAM	RB1#0	23.45	23.37	23.63
		RB1#50	23.88	23.82	24.12
		RB1#99	23.49	23.30	23.58
		RB50#0	22.55	22.63	22.52
		RB50#50	22.58	22.58	22.64
		RB100#0	22.55	22.55	22.54

LTE Band 40 Lower Band

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5MHz	QPSK	RB1#0	22.90	22.87	22.87
		RB1#13	23.04	23.03	22.91
		RB1#24	22.94	22.92	22.86
		RB15#0	21.89	21.93	21.82
		RB15#10	21.97	21.96	21.94
		RB25#0	21.89	21.94	21.89
	16QAM	RB1#0	21.90	22.06	21.72
		RB1#13	22.00	22.17	21.89
		RB1#24	21.89	22.05	21.72
		RB15#0	20.94	20.96	20.81
		RB15#10	20.99	21.00	20.86
		RB25#0	20.99	20.92	20.94
10MHz	QPSK	RB1#0	/	22.92	/
		RB1#25	/	23.19	/
		RB1#49	/	22.97	/
		RB25#0	/	21.95	/
		RB25#25	/	21.96	/
		RB50#0	/	21.96	/
	16QAM	RB1#0	/	22.04	/
		RB1#25	/	22.33	/
		RB1#49	/	22.05	/
		RB25#0	/	20.97	/
		RB25#25	/	21.04	/
		RB50#0	/	20.98	/

Note: the device is a mobile station. For 5MHz mode, the channel power is equal to the test result in dBm/5MHz. For 10MHz mode, the PSD as below:

Channel Bandwidth	Modulation	Resource Block & RB offset	Middle Channel (dBm/5MHz)
10MHz	QPSK	RB1#0	22.25
		RB1#25	23.01
		RB1#49	22.52
		RB25#0	21.24
		RB25#25	21.41
		RB50#0	19.74
	16QAM	RB1#0	21.22
		RB1#25	22.02
		RB1#49	21.97
		RB25#0	20.22
		RB25#25	20.87
		RB50#0	17.80

LTE Band 40 Upper Band

Channel Bandwidth	Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5MHz	QPSK	RB1#0	22.92	22.78	22.69
		RB1#13	22.96	22.71	22.64
		RB1#24	22.77	22.47	22.69
		RB15#0	21.93	21.44	21.38
		RB15#10	21.94	21.50	21.53
		RB25#0	21.83	21.68	21.72
	16QAM	RB1#0	21.89	21.37	21.57
		RB1#13	21.99	21.57	21.61
		RB1#24	21.84	21.33	21.56
		RB15#0	20.68	20.51	20.55
		RB15#10	20.87	20.71	20.73
		RB25#0	20.88	20.75	20.68
10MHz	QPSK	RB1#0	/	22.91	/
		RB1#25	/	22.84	/
		RB1#49	/	22.50	/
		RB25#0	/	21.57	/
		RB25#25	/	21.63	/
		RB50#0	/	21.46	/
	16QAM	RB1#0	/	21.70	/
		RB1#25	/	21.92	/
		RB1#49	/	21.65	/
		RB25#0	/	20.51	/
		RB25#25	/	20.70	/
		RB50#0	/	20.73	/

Note: the device is a mobile station. For 5MHz mode, the channel power is equal to the test result in dBm/5MHz. For 10MHz mode, the PSD as below:

Channel Bandwidth	Modulation	Resource Block & RB offset	Middle Channel (dBm/5MHz)
10MHz	QPSK	RB1#0	22.31
		RB1#25	22.42
		RB1#49	22.32
		RB25#0	21.57
		RB25#25	21.22
		RB50#0	19.77
	16QAM	RB1#0	21.12
		RB1#25	21.24
		RB1#49	21.32
		RB25#0	20.42
		RB25#25	20.33
		RB50#0	18.12

PAR, Band 2

Test Modulation		Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	20 MHz	3.13	3.51	3.33	13
	100 RB		4.35	4.23	3.97	13
16QAM	1 RB	20 MHz	4.03	4.55	4.49	13
	100 RB		5.30	5.19	5.01	13

PAR, Band 4

Test Modulation		Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	20 MHz	4.41	4.81	4.17	13
	100 RB		4.96	5.01	4.38	13
16QAM	1 RB	20 MHz	5.59	5.83	4.70	13
	100 RB		5.97	6.17	5.42	13

PAR, Band 5

Test Modulation		Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	10 MHz	4.58	4.14	4.38	13
	50 RB		4.93	4.61	4.90	13
16QAM	1 RB	10 MHz	5.65	5.30	5.10	13
	50 RB		5.86	5.68	5.88	13

PAR, Band 7

Test Modulation		Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	20 MHz	4.12	4.41	4.26	13
	100 RB		4.84	4.87	4.75	13
16QAM	1 RB	20 MHz	4.99	5.45	5.25	13
	100 RB		5.80	5.80	5.83	13

PAR, Band 12

Test Modulation		Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	10 MHz	4.99	5.22	5.25	13
	50 RB		5.51	5.25	5.22	13
16QAM	1 RB	10 MHz	6.06	5.57	6.29	13
	50 RB		6.38	6.20	6.14	13

PAR, Band 17

Test Modulation		Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	10 MHz	4.93	5.25	4.99	13
	50 RB		5.30	5.22	5.10	13
16QAM	1 RB	10 MHz	6.23	6.23	5.91	13
	50 RB		6.20	6.26	6.12	13

PAR, Band 38

Test Modulation		Channel Bandwidth	Low Channel PAR (dB)	Middle Channel PAR (dB)	High Channel PAR (dB)	Limit (dB)
QPSK	1 RB	20 MHz	5.66	5.54	5.22	13
	100 RB		6.98	6.39	6.87	13
16QAM	1 RB	20 MHz	5.87	5.61	5.14	13
	100 RB		6.77	6.97	6.59	13

**Band 40 Duty cycle:
2305-2315MHz**

Test Modulation	Test Bandwidth	Ton (ms)	Total (ms)	Duty Cycle (%)	Limit (%)
QPSK	5M	3.137	10.000	31.37	38
	10M	3.180	10.006	31.78	
16-QAM	5M	3.203	9.940	32.22	
	10M	3.234	9.961	32.47	

2350-2360MHz

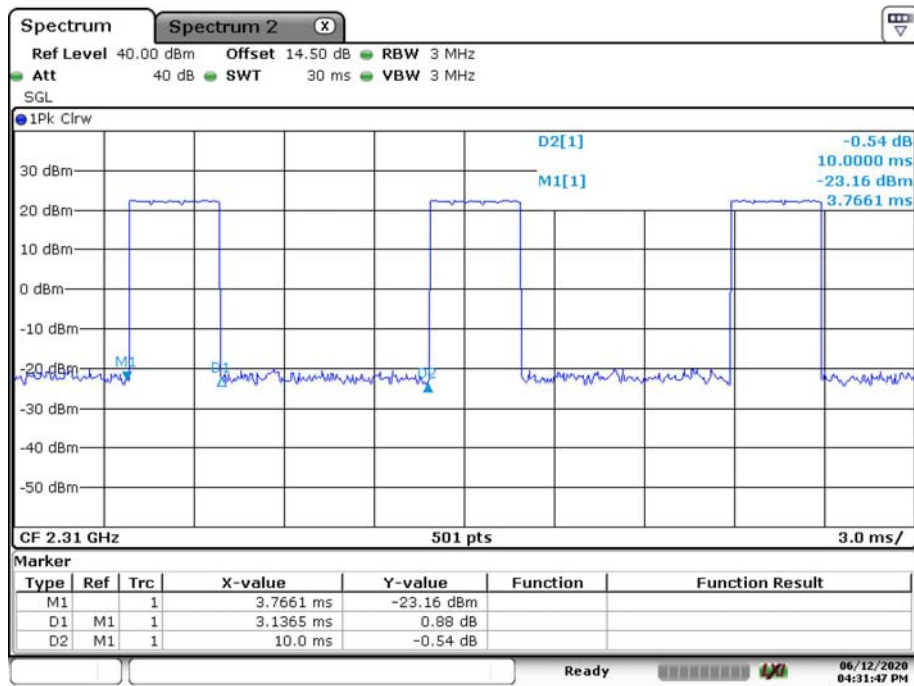
Test Modulation	Test Bandwidth	Ton (ms)	Total (ms)	Duty Cycle (%)	Limit (%)
QPSK	5M	3.374	10.104	33.39	38
	10M	3.104	10.006	31.02	
16-QAM	5M	3.356	10.120	33.16	
	10M	3.207	10.000	32.07	

Note: EUT setup is as following:

Uplink Downlink configuration	Subframe number									
	0	1	2	3	4	5	6	7	8	9
3	D	S	U	U	U	D	D	D	D	D

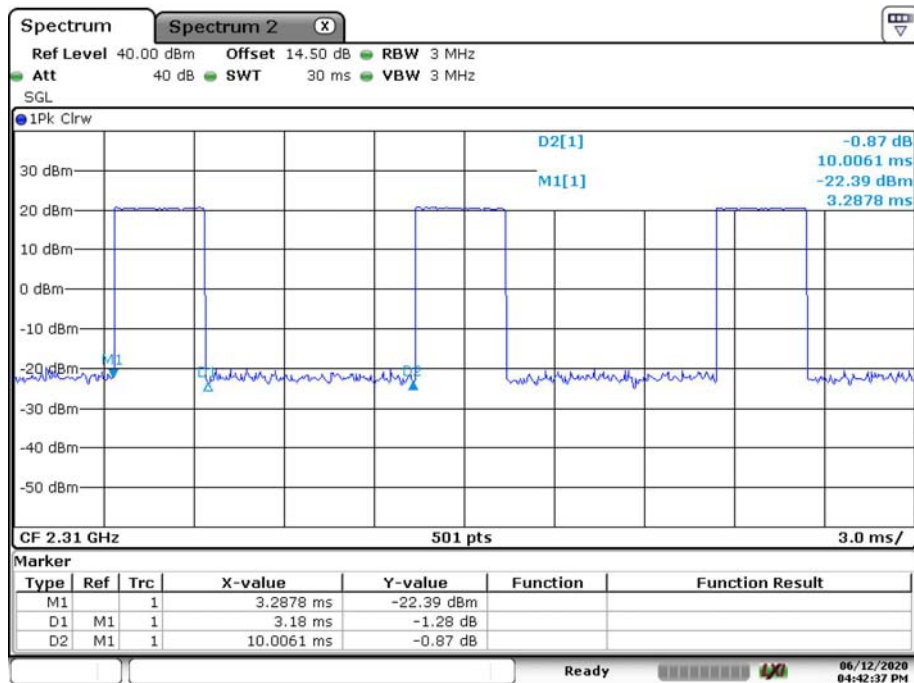
Band 40(2305-2315MHz)

QPSK, 5MHz



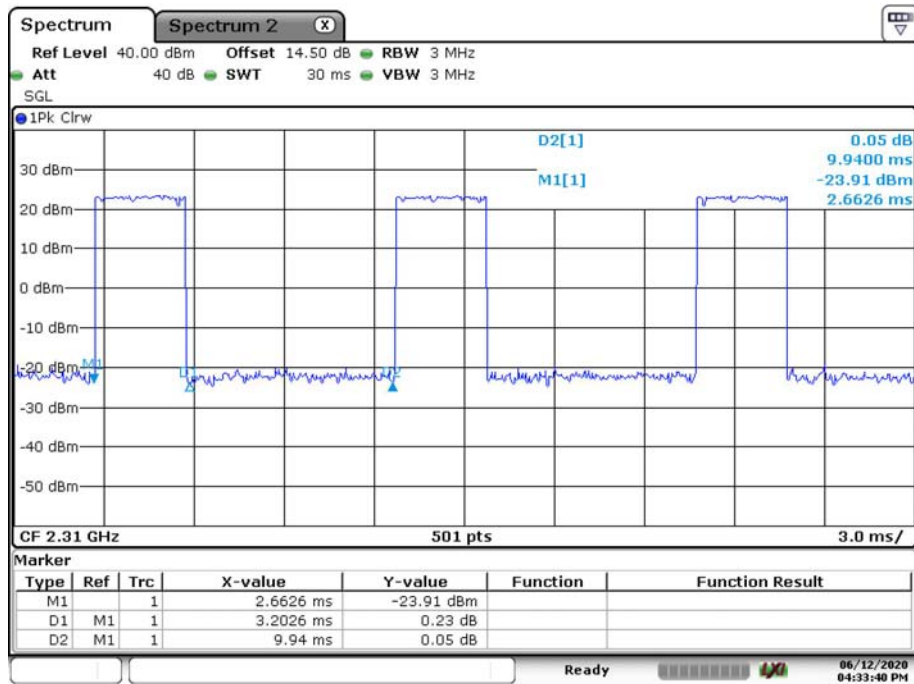
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QPSK, 10MHz



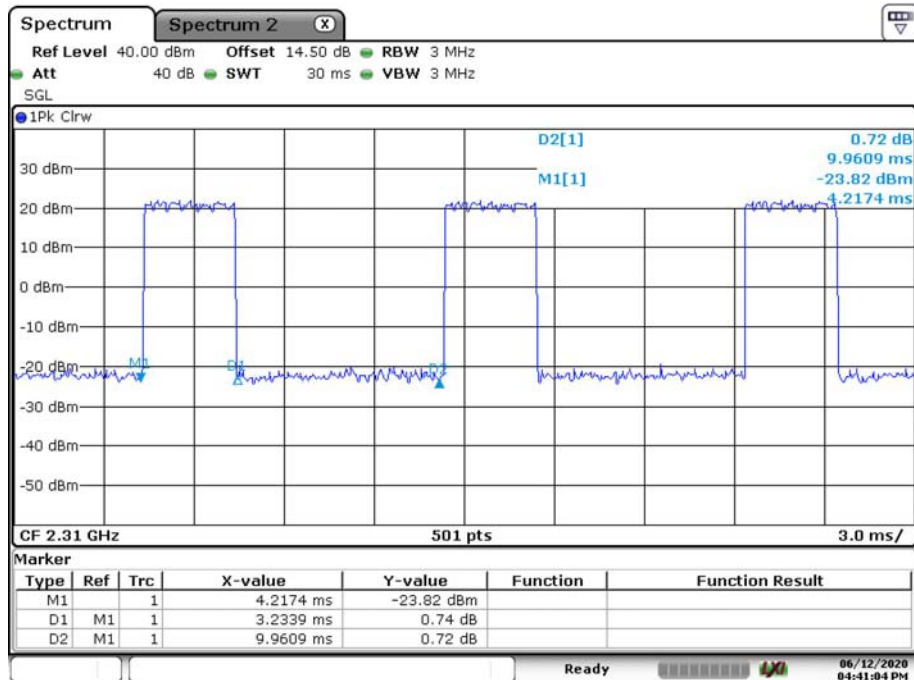
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16-QAM, 5MHz

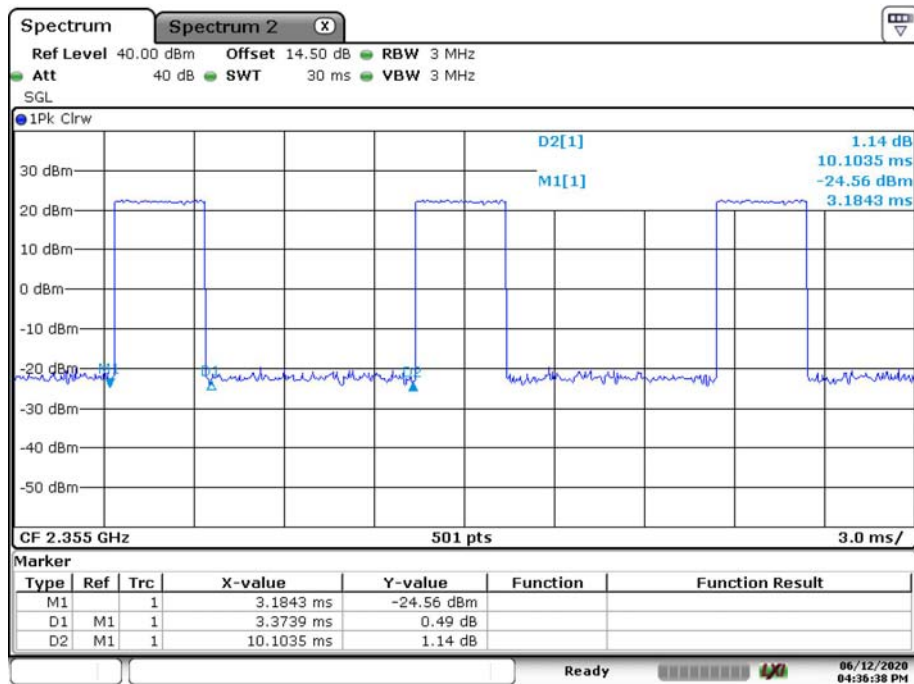


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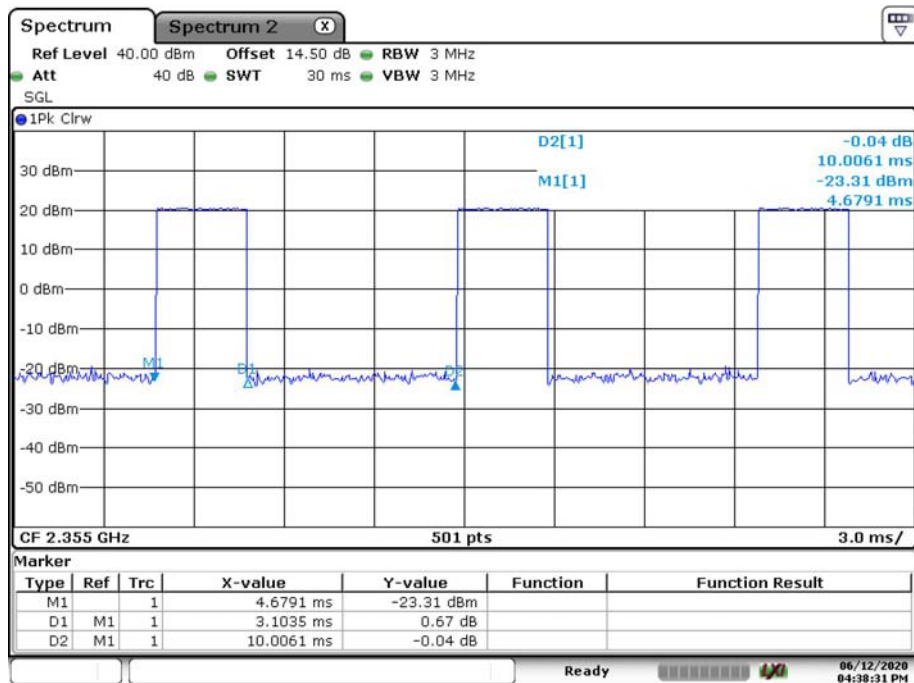
16-QAM, 10MHz



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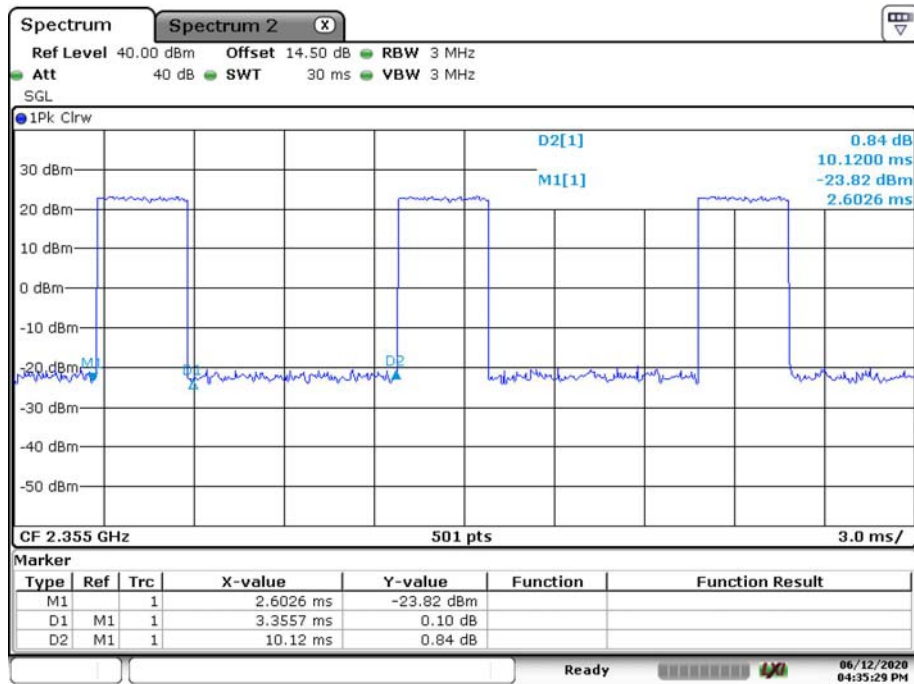
Band 40(2350-2360MHz)**QPSK, 5MHz**

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QPSK, 10MHz

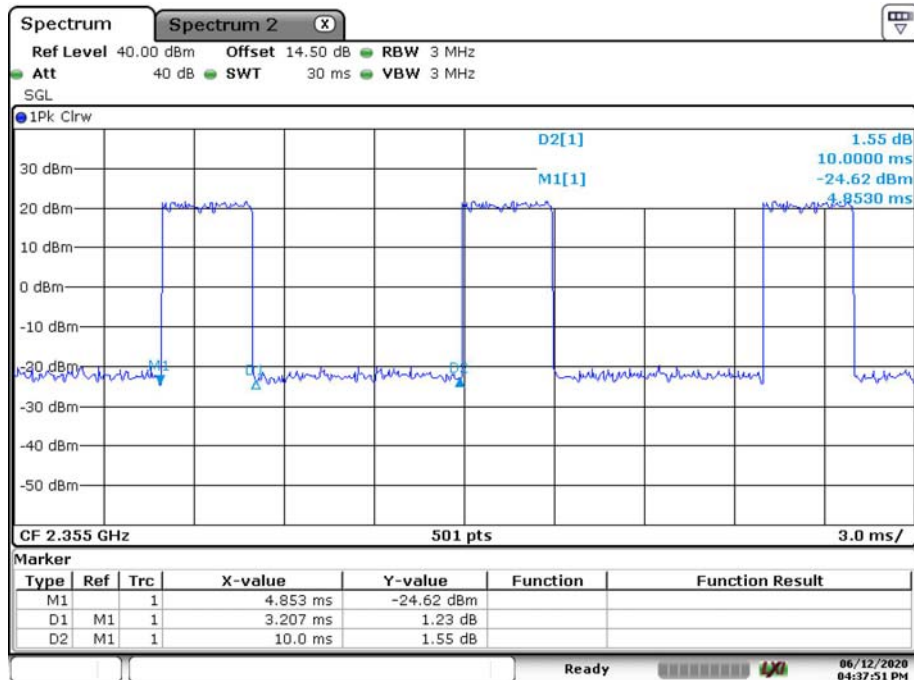
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16-QAM, 5MHz



Date: 12.JUN.2020 16:35:29

16-QAM, 10MHz



Date: 12.JUN.2020 16:37:52

ERP & EIRP

Part 22H

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
GSM 850 Middle Channel								
836.60	H	87.60	12.68	0.00	0.97	11.71	38.45	26.74
836.60	V	100.24	28.45	0.00	0.97	27.48	38.45	10.97
EGPRS850 Middle Channel								
836.60	H	81.59	6.67	0.00	0.97	5.70	38.45	32.75
836.60	V	95.76	23.97	0.00	0.97	23.00	38.45	15.45
WCDMA R99 Band 5 middle channel								
836.60	H	77.91	2.99	0.00	0.97	2.02	38.45	36.43
836.60	V	90.76	18.97	0.00	0.97	18.00	38.45	20.45

Part 24E

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
PCS 1900 Middle Channel								
1880.00	H	90.89	18.28	11.66	2.66	27.28	33.00	5.72
1880.00	V	88.95	16.48	11.66	2.66	25.48	33.00	7.52
EGPRS1900 Middle Channel								
1880.00	H	86.21	13.60	11.66	2.66	22.60	33.00	10.40
1880.00	V	84.37	11.90	11.66	2.66	20.90	33.00	12.10
WCDMA R99 Band 2 middle channel								
1880.00	H	84.04	11.43	11.66	2.66	20.43	33.00	12.57
1880.00	V	82.90	10.43	11.66	2.66	19.43	33.00	13.57

Part 27

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
WCDMA R99 Band 4 middle channel								
1732.60	H	82.09	8.04	10.90	2.51	16.43	30.00	13.57
1732.60	V	85.47	11.10	10.90	2.51	19.49	30.00	10.51

Note:

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

LTE Band 2

Frequency (MHz)	BW (MHz)	Modulation	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
					Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
1880.00	1.40	QPSK	H	83.32	10.71	11.66	2.66	19.71	33.00	13.29
1880.00			V	81.85	9.38	11.66	2.66	18.38	33.00	14.62
1880.00	3.00		H	83.10	10.49	11.66	2.66	19.49	33.00	13.51
1880.00			V	81.58	9.11	11.66	2.66	18.11	33.00	14.89
1880.00	5.00		H	82.96	10.35	11.66	2.66	19.35	33.00	13.65
1880.00			V	81.51	9.04	11.66	2.66	18.04	33.00	14.96
1880.00	10.00		H	82.86	10.25	11.66	2.66	19.25	33.00	13.75
1880.00			V	81.43	8.96	11.66	2.66	17.96	33.00	15.04
1880.00	15.00		H	83.19	10.58	11.66	2.66	19.58	33.00	13.42
1880.00			V	81.65	9.18	11.66	2.66	18.18	33.00	14.82
1880.00	20.00		H	82.61	10.00	11.66	2.66	19.00	33.00	14.00
1880.00			V	81.22	8.75	11.66	2.66	17.75	33.00	15.25
1880.00	1.40	16QAM	H	82.07	9.46	11.66	2.66	18.46	33.00	14.54
1880.00			V	80.46	7.99	11.66	2.66	16.99	33.00	16.01
1880.00	3.00		H	81.92	9.31	11.66	2.66	18.31	33.00	14.69
1880.00			V	80.24	7.77	11.66	2.66	16.77	33.00	16.23
1880.00	5.00		H	81.82	9.21	11.66	2.66	18.21	33.00	14.79
1880.00			V	80.17	7.70	11.66	2.66	16.70	33.00	16.30
1880.00	10.00		H	81.63	9.02	11.66	2.66	18.02	33.00	14.98
1880.00			V	79.95	7.48	11.66	2.66	16.48	33.00	16.52
1880.00	15.00		H	81.28	8.67	11.66	2.66	17.67	33.00	15.33
1880.00			V	79.71	7.24	11.66	2.66	16.24	33.00	16.76
1880.00	20.00		H	81.47	8.86	11.66	2.66	17.86	33.00	15.14
1880.00			V	79.92	7.45	11.66	2.66	16.45	33.00	16.55

LTE Band 4

Frequency (MHz)	BW (MHz)	Modulation	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
					Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
1732.50	1.40	QPSK	H	85.09	11.04	10.90	2.51	19.43	30.00	10.57
1732.50			V	84.16	9.79	10.90	2.51	18.18	30.00	11.82
1732.50	3.00		H	85.07	11.02	10.90	2.51	19.41	30.00	10.59
1732.50			V	84.11	9.74	10.90	2.51	18.13	30.00	11.87
1732.50	5.00		H	84.91	10.86	10.90	2.51	19.25	30.00	10.75
1732.50			V	84.03	9.66	10.90	2.51	18.05	30.00	11.95
1732.50	10.00		H	84.71	10.66	10.90	2.51	19.05	30.00	10.95
1732.50			V	83.91	9.54	10.90	2.51	17.93	30.00	12.07
1732.50	15.00		H	84.55	10.50	10.90	2.51	18.89	30.00	11.11
1732.50			V	83.62	9.25	10.90	2.51	17.64	30.00	12.36
1732.50	20.00		H	84.47	10.42	10.90	2.51	18.81	30.00	11.19
1732.50			V	83.54	9.17	10.90	2.51	17.56	30.00	12.44
1732.50	1.40	16QAM	H	84.08	10.03	10.90	2.51	18.42	30.00	11.58
1732.50			V	83.22	8.85	10.90	2.51	17.24	30.00	12.76
1732.50	3.00		H	83.66	9.61	10.90	2.51	18.00	30.00	12.00
1732.50			V	82.75	8.38	10.90	2.51	16.77	30.00	13.23
1732.50	5.00		H	83.68	9.63	10.90	2.51	18.02	30.00	11.98
1732.50			V	82.71	8.34	10.90	2.51	16.73	30.00	13.27
1732.50	10.00		H	83.51	9.46	10.90	2.51	17.85	30.00	12.15
1732.50			V	82.63	8.26	10.90	2.51	16.65	30.00	13.35
1732.50	15.00		H	83.43	9.38	10.90	2.51	17.77	30.00	12.23
1732.50			V	82.48	8.11	10.90	2.51	16.50	30.00	13.50
1732.50	20.00		H	83.37	9.32	10.90	2.51	17.71	30.00	12.29
1732.50			V	82.42	8.05	10.90	2.51	16.44	30.00	13.56

LTE Band 5

Frequency (MHz)	BW (MHz)	Modulation	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
					Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
836.50	1.40	QPSK	H	79.87	4.94	0.00	0.97	3.97	38.45	34.48
836.50			V	92.83	21.04	0.00	0.97	20.07	38.45	18.38
836.50	3.00		H	78.69	3.76	0.00	0.97	2.79	38.45	35.66
836.50			V	91.33	19.54	0.00	0.97	18.57	38.45	19.88
836.50	5.00		H	77.94	3.01	0.00	0.97	2.04	38.45	36.41
836.50			V	90.72	18.93	0.00	0.97	17.96	38.45	20.49
836.50	10.00		H	77.16	2.23	0.00	0.97	1.26	38.45	37.19
836.50			V	90.04	18.25	0.00	0.97	17.28	38.45	21.17
836.50	1.40	16QAM	H	79.56	4.63	0.00	0.97	3.66	38.45	34.79
836.50			V	92.72	20.93	0.00	0.97	19.96	38.45	18.49
836.50	3.00		H	76.73	1.80	0.00	0.97	0.83	38.45	37.62
836.50			V	91.20	19.41	0.00	0.97	18.44	38.45	20.01
836.50	5.00		H	76.64	1.71	0.00	0.97	0.74	38.45	37.71
836.50			V	90.57	18.78	0.00	0.97	17.81	38.45	20.64
836.50	10.00		H	75.24	0.31	0.00	0.97	-0.66	38.45	39.11
836.50			V	89.88	18.09	0.00	0.97	17.12	38.45	21.33

LTE Band 7

Frequency (MHz)	BW (MHz)	Modulation	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)	
					Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)				
2535.00	5.00	QPSK	H	81.64	9.03	13.14	3.10	19.07	33.00	13.93	
2535.00			V	81.12	9.97	13.14	3.10	20.01	33.00	12.99	
2535.00	10.00		H	81.63	9.02	13.14	3.10	19.06	33.00	13.94	
2535.00			V	81.09	9.94	13.14	3.10	19.98	33.00	13.02	
2535.00	15.00		H	81.84	9.23	13.14	3.10	19.27	33.00	13.73	
2535.00			V	81.19	10.04	13.14	3.10	20.08	33.00	12.92	
2535.00	20.00		H	81.86	9.25	13.14	3.10	19.29	33.00	13.71	
2535.00			V	81.21	10.06	13.14	3.10	20.10	33.00	12.90	
2535.00	5.00		16QAM	H	80.60	7.99	13.14	3.10	18.03	33.00	14.97
2535.00				V	80.04	8.89	13.14	3.10	18.93	33.00	14.07
2535.00	10.00	H		80.43	7.82	13.14	3.10	17.86	33.00	15.14	
2535.00		V		79.89	8.74	13.14	3.10	18.78	33.00	14.22	
2535.00	15.00	H		80.57	7.96	13.14	3.10	18.00	33.00	15.00	
2535.00		V		79.96	8.81	13.14	3.10	18.85	33.00	14.15	
2535.00	20.00	H		80.71	8.10	13.14	3.10	18.14	33.00	14.86	
2535.00		V		80.12	8.97	13.14	3.10	19.01	33.00	13.99	

LTE Band 12

Frequency (MHz)	BW (MHz)	Modulation	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
					Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
707.50	1.40	QPSK	H	80.13	3.27	0.00	0.94	2.33	34.77	32.44
707.50			V	92.88	18.46	0.00	0.94	17.52	34.77	17.25
707.50	3.00		H	79.65	2.79	0.00	0.94	1.85	34.77	32.92
707.50			V	92.36	17.94	0.00	0.94	17.00	34.77	17.77
707.50	5.00		H	79.07	2.21	0.00	0.94	1.27	34.77	33.50
707.50			V	91.77	17.35	0.00	0.94	16.41	34.77	18.36
707.50	10.00		H	78.86	2.00	0.00	0.94	1.06	34.77	33.71
707.50			V	91.20	16.78	0.00	0.94	15.84	34.77	18.93
707.50	1.40	16QAM	H	80.01	3.15	0.00	0.94	2.21	34.77	32.56
707.50			V	92.85	18.43	0.00	0.94	17.49	34.77	17.28
707.50	3.00		H	79.33	2.47	0.00	0.94	1.53	34.77	33.24
707.50			V	92.31	17.89	0.00	0.94	16.95	34.77	17.82
707.50	5.00		H	78.71	1.85	0.00	0.94	0.91	34.77	33.86
707.50			V	91.54	17.12	0.00	0.94	16.18	34.77	18.59
707.50	10.00		H	78.21	1.35	0.00	0.94	0.41	34.77	34.36
707.50			V	91.12	16.70	0.00	0.94	15.76	34.77	19.01

LTE Band 17

Frequency (MHz)	BW (MHz)	Modulation	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
					Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
710.00	5.00	QPSK	H	77.89	1.08	0.00	0.94	0.14	34.77	34.63
710.00			V	91.13	16.77	0.00	0.94	15.83	34.77	18.94
710.00	10.00		H	77.05	0.24	0.00	0.94	-0.70	34.77	35.47
710.00			V	90.62	16.26	0.00	0.94	15.32	34.77	19.45
710.00	5.00	16QAM	H	77.64	0.83	0.00	0.94	-0.11	34.77	34.88
710.00			V	91.00	16.64	0.00	0.94	15.70	34.77	19.07
710.00	10.00		H	77.02	0.21	0.00	0.94	-0.73	34.77	35.50
710.00			V	90.43	16.07	0.00	0.94	15.13	34.77	19.64

LTE Band 38

Frequency (MHz)	BW (MHz)	Modulation	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
					Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
2595.00	5.00	QPSK	H	81.29	9.06	13.20	3.10	19.16	33.00	13.84
2595.00			V	80.61	10.24	13.20	3.10	20.34	33.00	12.66
2595.00	10.00		H	80.91	8.68	13.20	3.10	18.78	33.00	14.22
2595.00			V	80.25	9.88	13.20	3.10	19.98	33.00	13.02
2595.00	15.00		H	80.90	8.67	13.20	3.10	18.77	33.00	14.23
2595.00			V	80.21	9.84	13.20	3.10	19.94	33.00	13.06
2595.00	20.00		H	80.89	8.66	13.20	3.10	18.76	33.00	14.24
2595.00			V	80.16	9.79	13.20	3.10	19.89	33.00	13.11
2595.00	5.00	16QAM	H	80.05	7.82	13.20	3.10	17.92	33.00	15.08
2595.00			V	79.55	9.18	13.20	3.10	19.28	33.00	13.72
2595.00	10.00		H	79.98	7.75	13.20	3.10	17.85	33.00	15.15
2595.00			V	79.51	9.14	13.20	3.10	19.24	33.00	13.76
2595.00	15.00		H	79.93	7.70	13.20	3.10	17.80	33.00	15.20
2595.00			V	79.46	9.09	13.20	3.10	19.19	33.00	13.81
2595.00	20.00		H	79.85	7.62	13.20	3.10	17.72	33.00	15.28
2595.00			V	79.42	9.05	13.20	3.10	19.15	33.00	13.85

LTE Band 40**Lower:**

Frequency (MHz)	BW (MHz)	Modulation	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm/5MHz)	Limit (dBm/5MHz)	Margin (dB)
					Substituted Level (dBm)	Antenna Gain (dBi/dBi)	Cable Loss (dB)			
2310.00	5.00	QPSK	H	83.55	13.17	11.31	2.98	21.50	24.00	2.50
2310.00			V	82.42	12.72	11.31	2.98	21.05	24.00	2.95
2310.00	10.00		H	83.59	13.21	11.31	2.98	21.54	24.00	2.46
2310.00			V	82.48	12.78	11.31	2.98	21.11	24.00	2.89
2310.00	5.00	16QAM	H	82.24	11.86	11.31	2.98	20.19	24.00	3.81
2310.00			V	81.27	11.57	11.31	2.98	19.90	24.00	4.10
2310.00	10.00		H	82.21	11.83	11.31	2.98	20.16	24.00	3.84
2310.00			V	81.33	11.63	11.31	2.98	19.96	24.00	4.04

Upper:

Frequency (MHz)	BW (MHz)	Modulation	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm/5MHz)	Limit (dBm/5MHz)	Margin (dB)
					Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
2355.00	5.00	QPSK	H	82.06	11.68	11.31	2.98	20.01	24.00	3.99
2355.00			V	81.58	11.88	11.31	2.98	20.21	24.00	3.79
2355.00	10.00		H	82.04	11.66	11.31	2.98	19.99	24.00	4.01
2355.00			V	81.55	11.85	11.31	2.98	20.18	24.00	3.82
2355.00	5.00	16QAM	H	81.02	10.64	11.31	2.98	18.97	24.00	5.03
2355.00			V	80.53	10.83	11.31	2.98	19.16	24.00	4.84
2355.00	10.00		H	81.01	10.63	11.31	2.98	18.96	24.00	5.04
2355.00			V	80.49	10.79	11.31	2.98	19.12	24.00	4.88

Note:

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

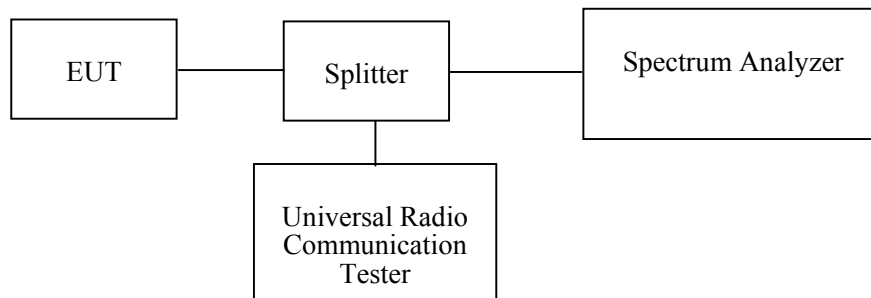
FCC §2.1049, §22.917, §22.905 & §24.238 & §27.53- OCCUPIED BANDWIDTH**Applicable Standard**

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

Test Procedure

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

The 26 dB & 99% bandwidth was recorded.

**Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2020-01-09	2021-01-09
Unknown	Coaxial Cable	C-SJ00-0010	C0010/04	Each time	N/A
E-Microwave	Blocking Control	EMDCB-00036	0E01201048	Each time	N/A
E-Microwave	Coaxial Attenuators	EMCA10-5RN-6	OE01203239	Each time	N/A
E-Microwave	Two-way Splitter	ODP-1-6-2S	OE0120142	Each time	N/A

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

Test Data**Environmental Conditions**

Temperature:	26.1°C~ 27.4 °C
Relative Humidity:	66%~73 %
ATM Pressure:	99.8kPa ~100.9kPa
Tester:	Rita Huang
Test Date:	2020-06-04~2020-06-12

Test Mode: Transmitting

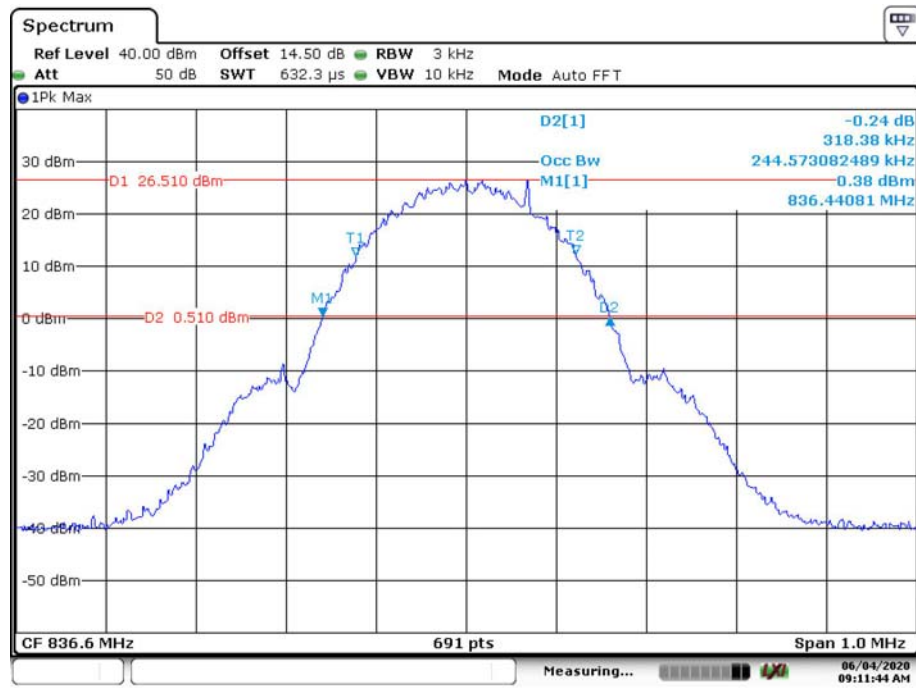
Test Result: Compliance. Please refer to the following table and plots.

Band	Test Channel	Mode	99% Occupied Bandwidth (MHz)	26 dB Occupied Bandwidth (MHz)
Cellular	M	GSM	0.245	0.318
		EDGE	0.250	0.317
PCS		GSM	0.245	0.317
		EDGE	0.247	0.323
WCDMA Band II		Rel 99	4.182	4.761
		HSDPA	4.211	4.761
		HSUPA	4.211	4.747
WCDMA Band IV		Rel 99	4.168	4.718
		HSDPA	4.197	4.848
		HSUPA	4.197	4.805
WCDMA Band V		Rel 99	4.192	4.817
		HSDPA	4.192	4.762
		HSUPA	4.192	4.793

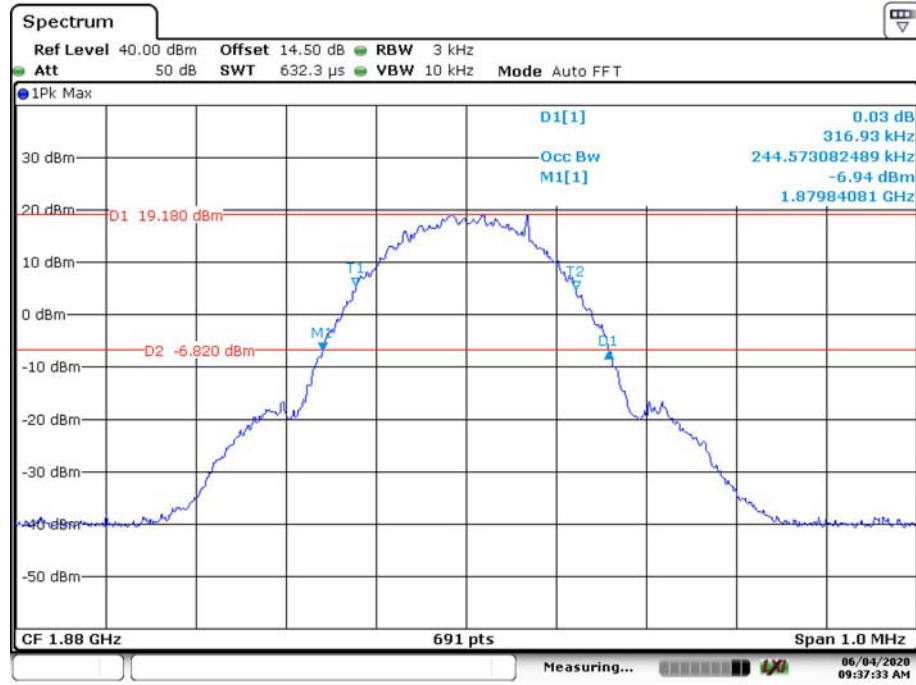
Band	Bandwidth	Modulation	99% occupied bandwidth (MHz)	26 dB bandwidth (MHz)
LTE Band 2	1.4 MHz	QPSK	1.102	1.338
		16QAM	1.102	1.404
	3 MHz	QPSK	2.683	2.880
		16QAM	2.683	2.892
	5 MHz	QPSK	4.551	5.280
		16QAM	4.531	5.180
	10 MHz	QPSK	8.981	10.040
		16QAM	8.942	9.760
	15 MHz	QPSK	13.533	14.880
		16QAM	13.533	14.820
LTE Band 4	1.4 MHz	QPSK	1.096	1.296
		16QAM	1.096	1.326
	3 MHz	QPSK	2.683	2.880
		16QAM	2.683	2.892
	5 MHz	QPSK	4.531	5.220
		16QAM	4.511	5.180
	10 MHz	QPSK	8.942	9.960
		16QAM	8.942	9.720
	15 MHz	QPSK	13.533	14.820
		16QAM	13.533	14.880
	20 MHz	QPSK	17.964	19.600
		16QAM	18.044	19.840

Band	Bandwidth	Modulation	99% occupied bandwidth (MHz)	26 dB bandwidth (MHz)
LTE Band 5	1.4 MHz	QPSK	1.096	1.302
		16QAM	1.102	1.314
	3 MHz	QPSK	2.683	2.880
		16QAM	2.683	2.880
	5 MHz	QPSK	4.551	5.280
		16QAM	4.511	5.180
LTE Band 7	5 MHz	QPSK	8.981	10.000
		16QAM	8.942	9.760
	10 MHz	QPSK	4.531	5.180
		16QAM	4.511	5.200
	15 MHz	QPSK	8.981	10.000
		16QAM	8.942	9.920
LTE Band 12	5 MHz	QPSK	13.473	14.880
		16QAM	13.533	14.820
	10 MHz	QPSK	17.964	19.520
		16QAM	17.964	19.520
	15 MHz	QPSK	1.096	1.302
		16QAM	1.096	1.320
LTE Band 17	3 MHz	QPSK	2.683	2.868
		16QAM	2.683	2.880
	5 MHz	QPSK	4.551	5.200
		16QAM	4.531	5.140
	10 MHz	QPSK	8.981	9.920
		16QAM	8.942	9.760
LTE Band 38	5 MHz	QPSK	4.531	5.240
		16QAM	4.511	5.160
	10 MHz	QPSK	8.981	9.880
		16QAM	8.942	9.760
	15 MHz	QPSK	4.511	5.180
		16QAM	4.511	5.140
LTE Band 40 Lower	5 MHz	QPSK	8.942	9.760
		16QAM	8.942	9.680
	10 MHz	QPSK	13.533	14.760
		16QAM	13.533	14.760
	15 MHz	QPSK	17.964	19.840
		16QAM	17.964	19.760
LTE Band 40 Upper	5 MHz	QPSK	4.515	5.181
		16QAM	4.515	5.297
	10 MHz	QPSK	8.973	9.899
		16QAM	8.944	9.696
	15 MHz	QPSK	4.515	5.152
		16QAM	4.515	5.326
	10 MHz	QPSK	8.944	9.899
		16QAM	8.973	9.638

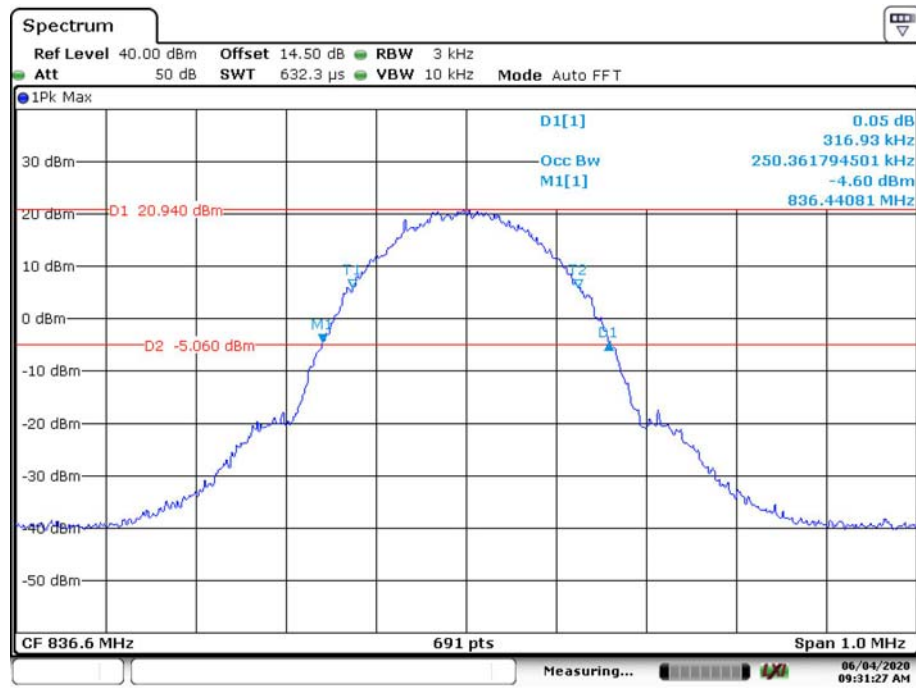
GSM Cellular 850



GSM PCS 1900

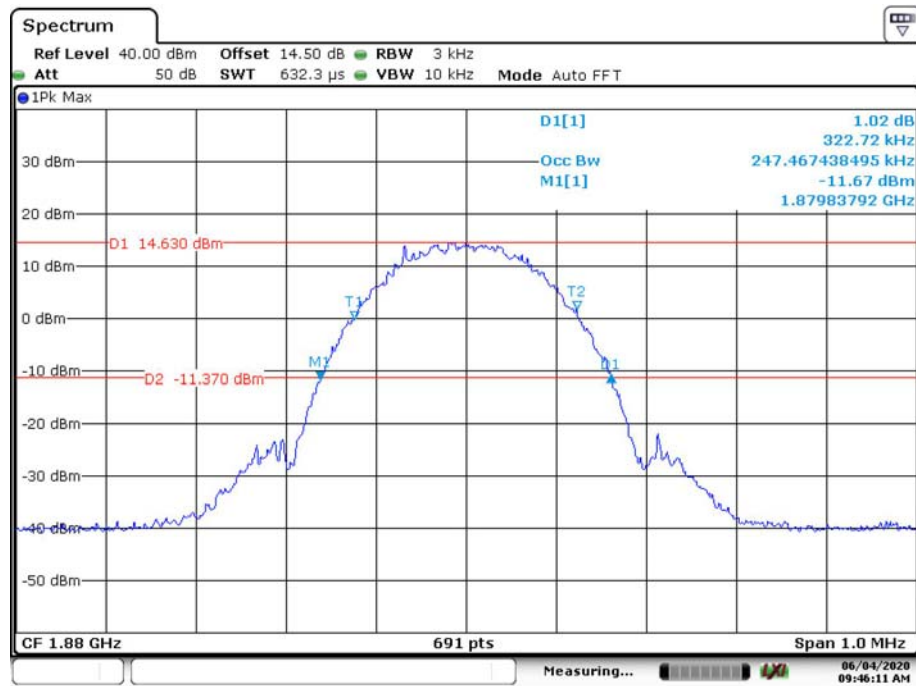


EDGE Cellular 850



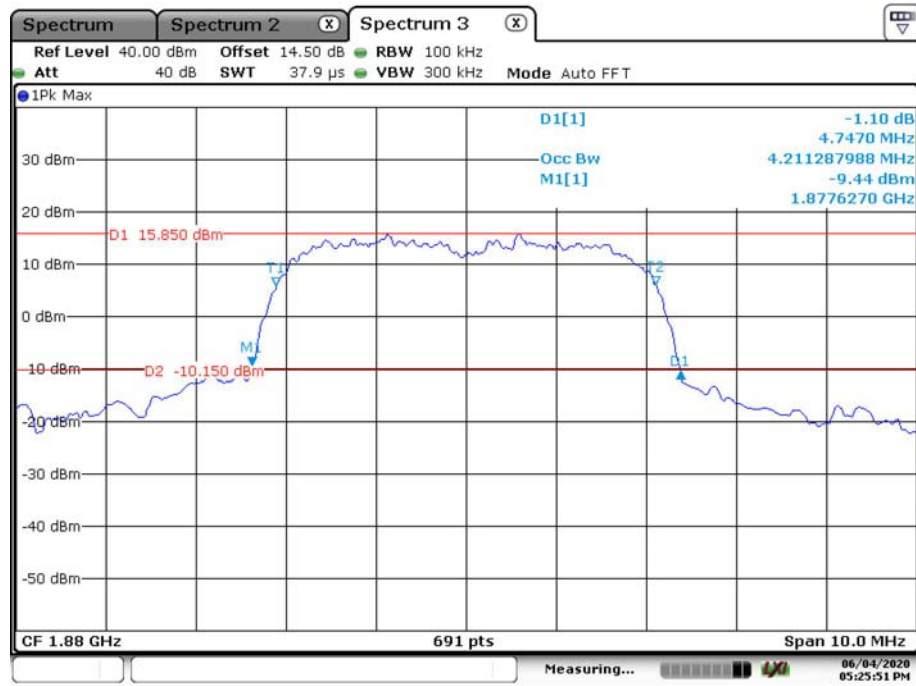
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EDGE PCS 1900



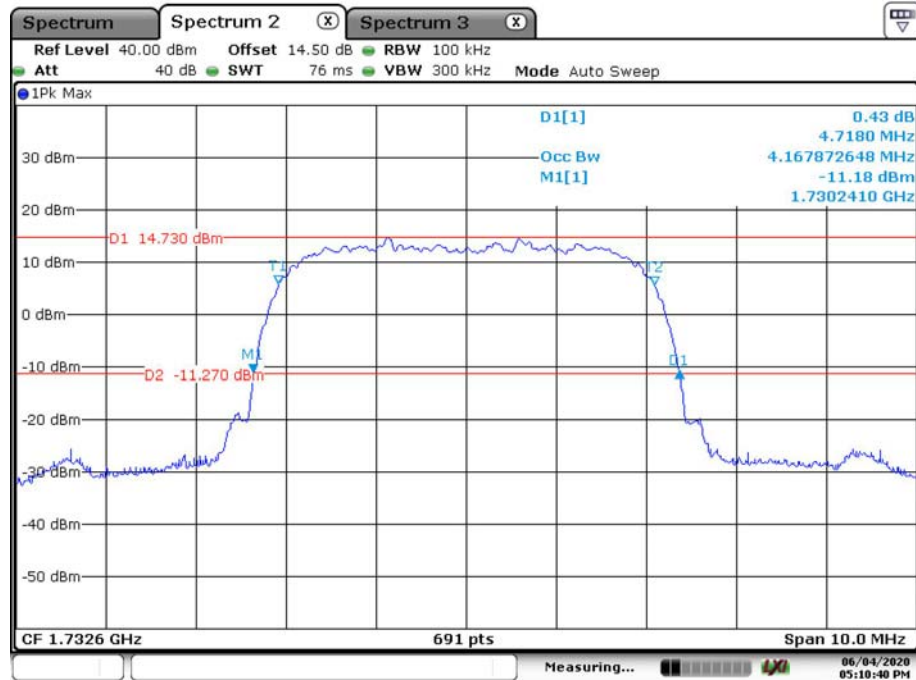
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WCDMA Band 2 HSUPA



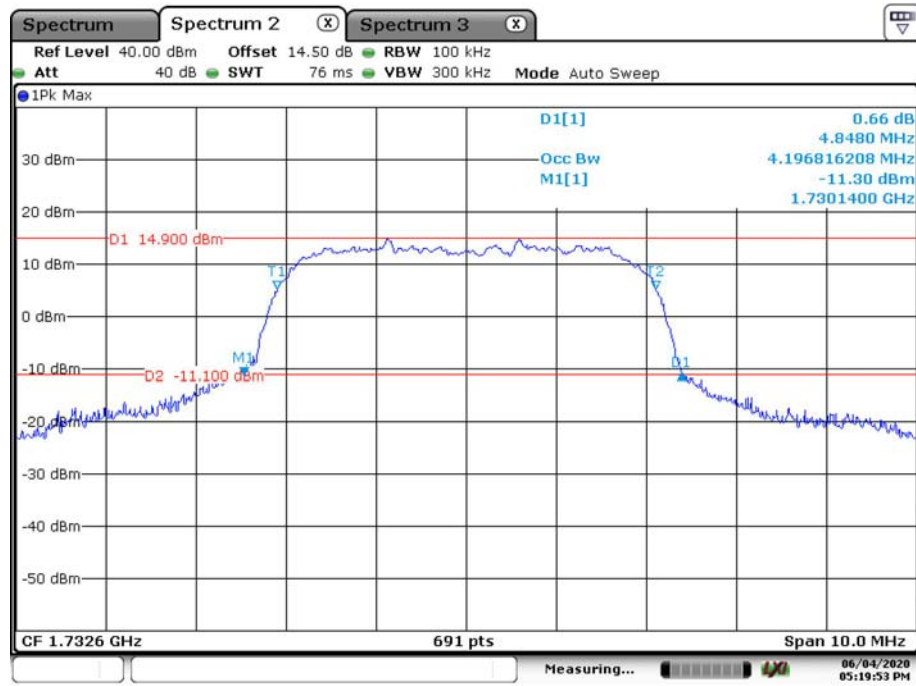
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WCDMA Band 4 Rel 99

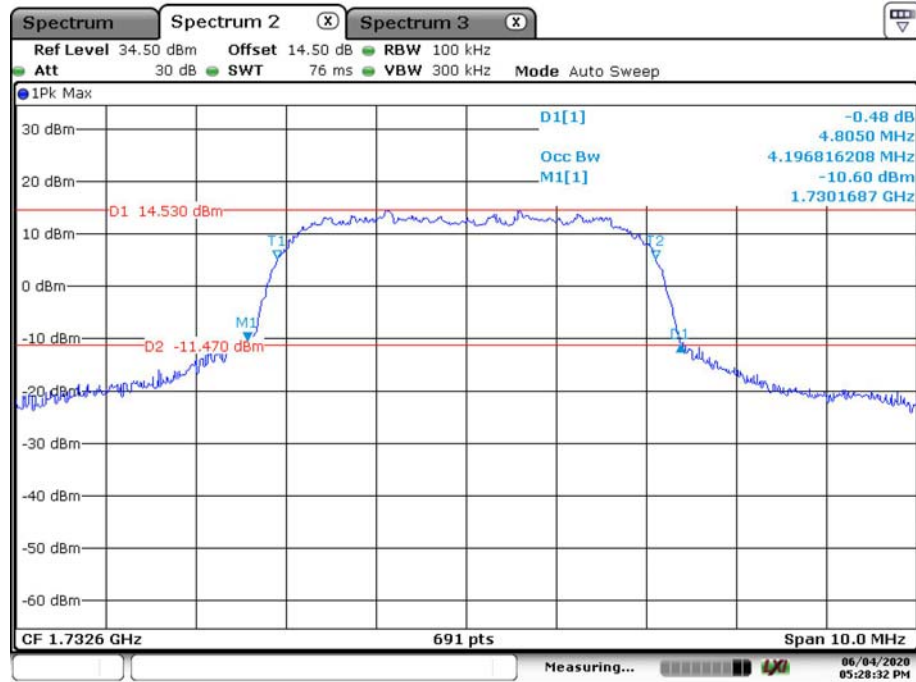


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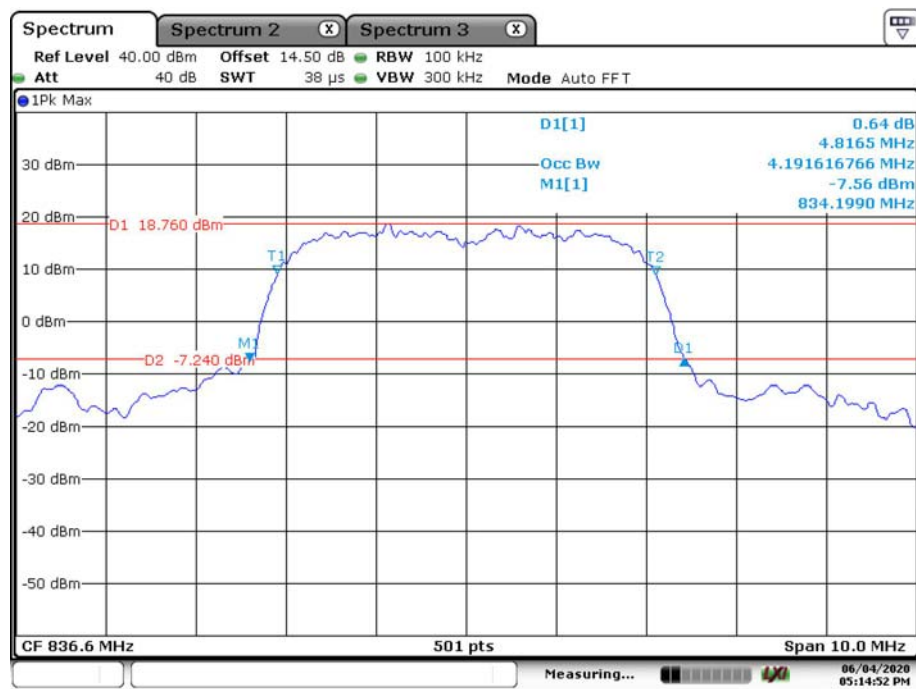
WCDMA Band 4 HSDPA



WCDMA Band 4 HSUPA

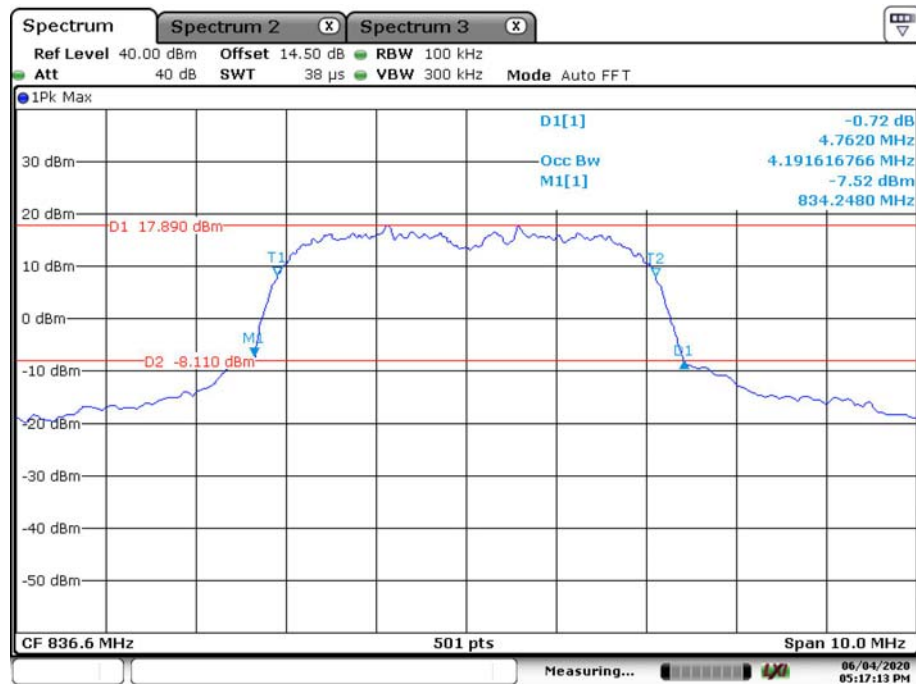


WCDMA Band 5 Rel 99



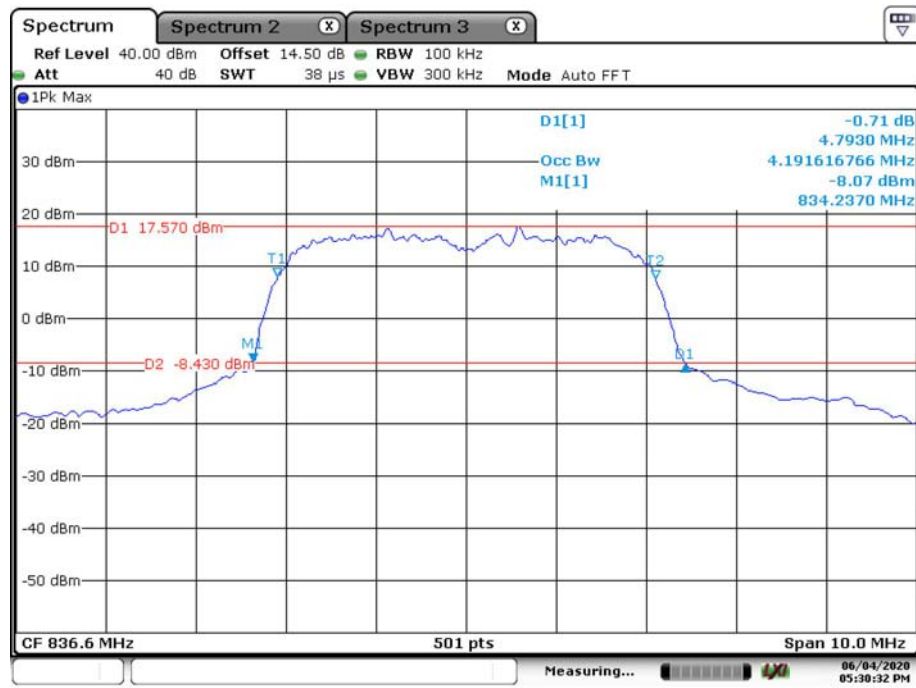
Date: 4.JUN.2020 17:14:52

WCDMA Band 5 HSDPA



Date: 4.JUN.2020 17:17:13

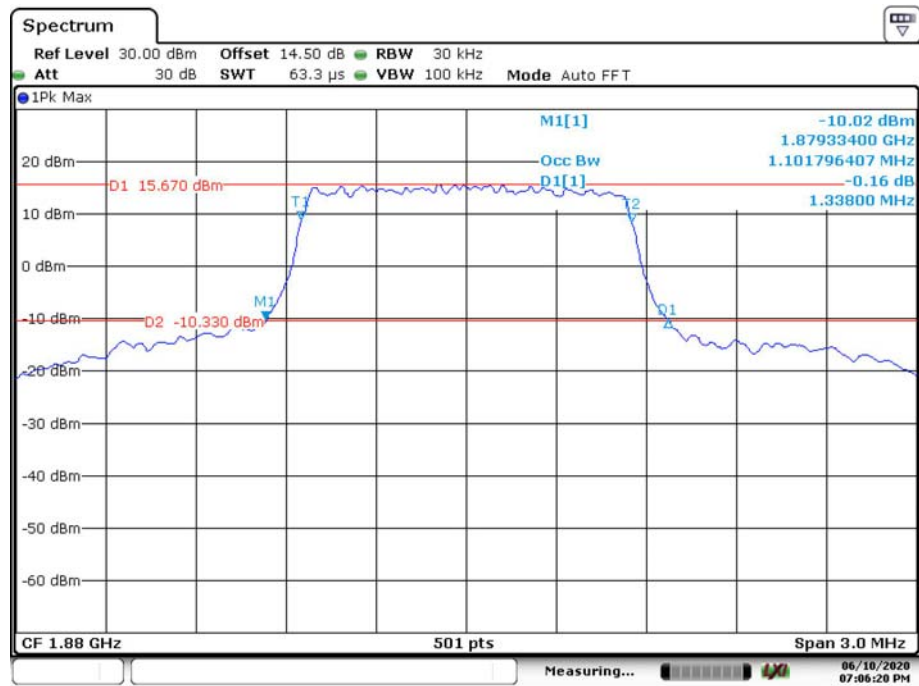
WCDMA Band 5 HSUPA



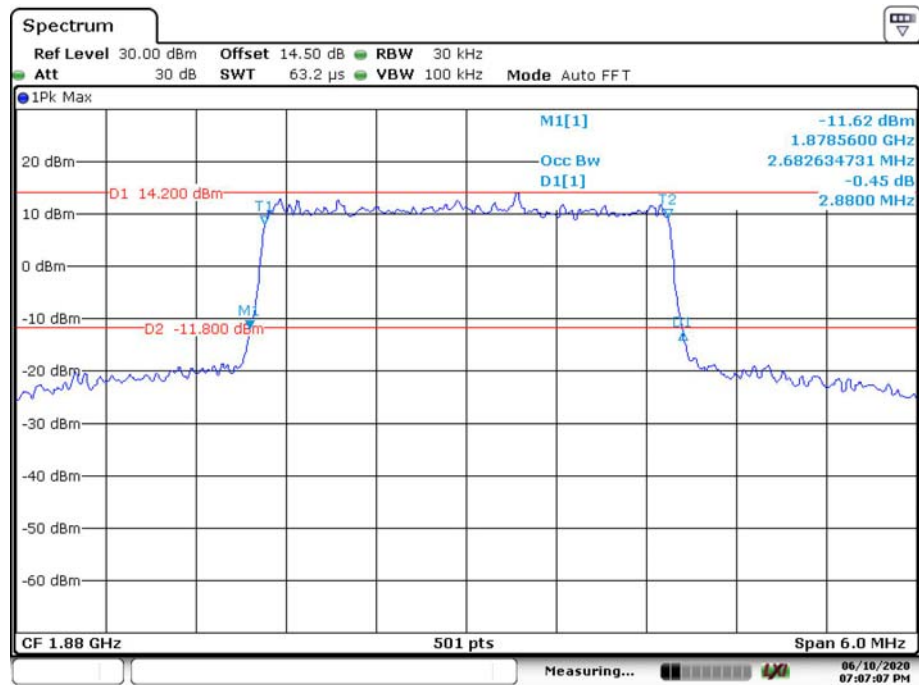
Date: 4.JUN.2020 17:30:32

LTE Band 2

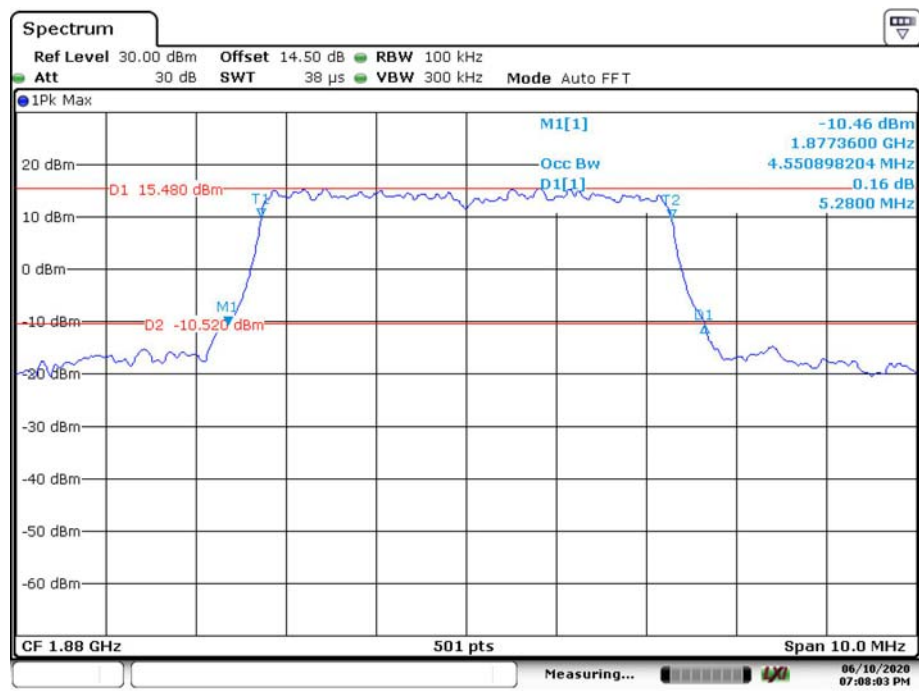
QPSK_1.4 MHz



QPSK_3 MHz

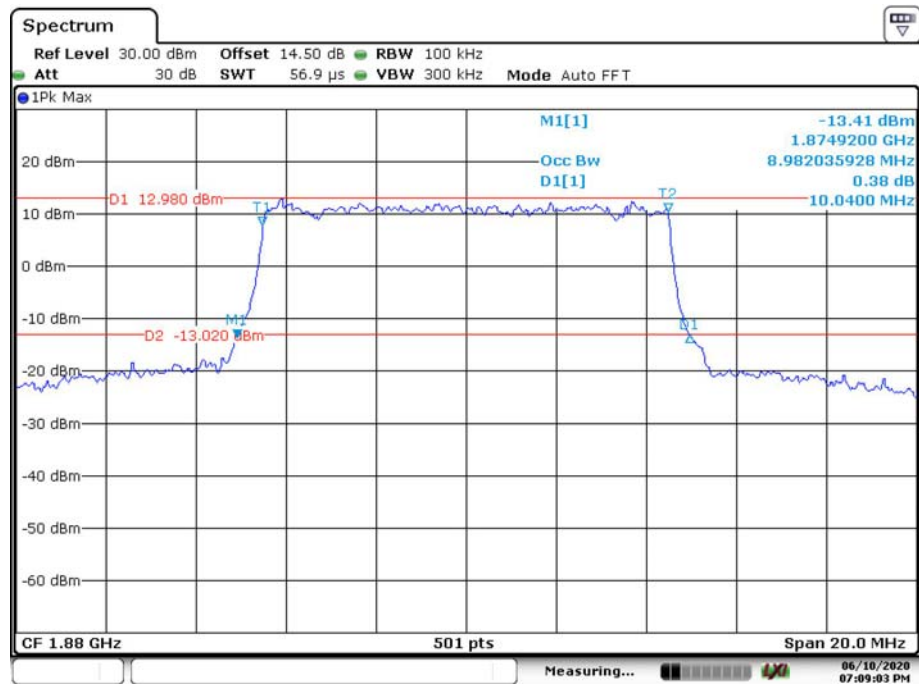


QPSK_5 MHz



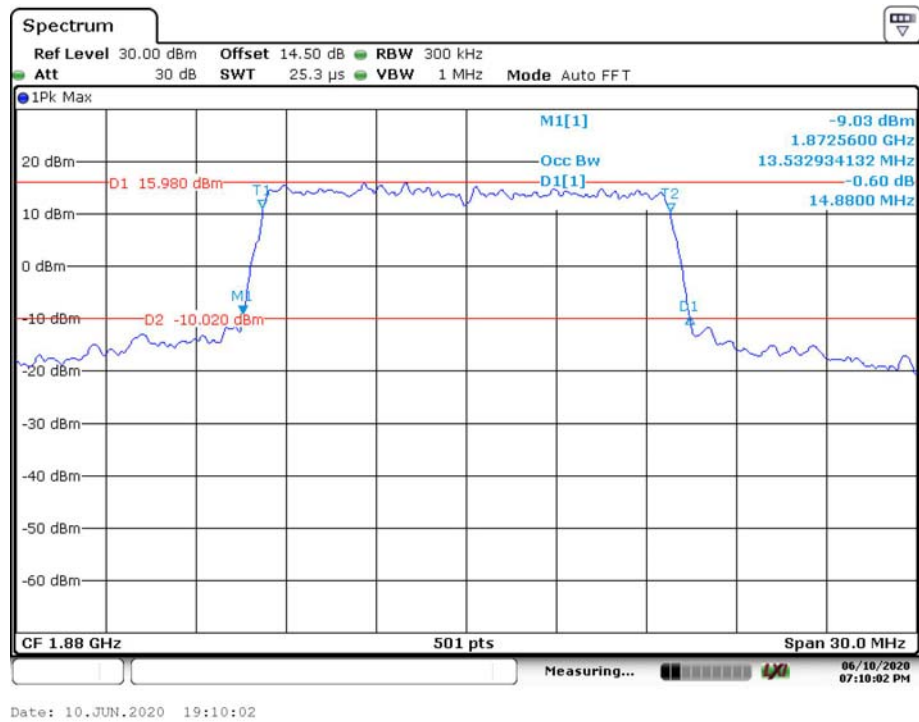
Date: 10.JUN.2020 19:08:03

QPSK_10 MHz

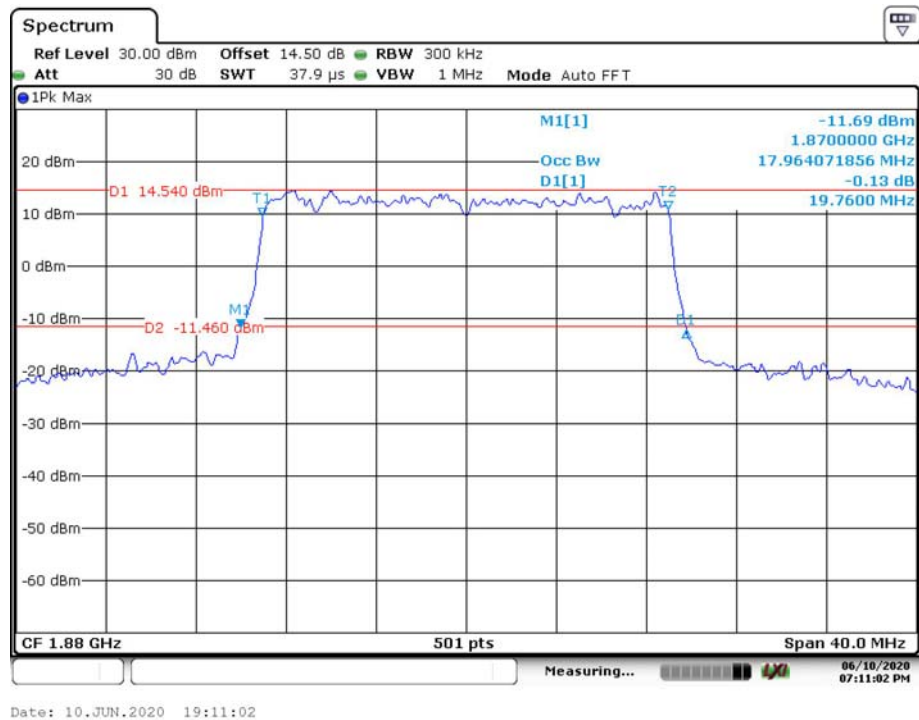


Date: 10.JUN.2020 19:09:04

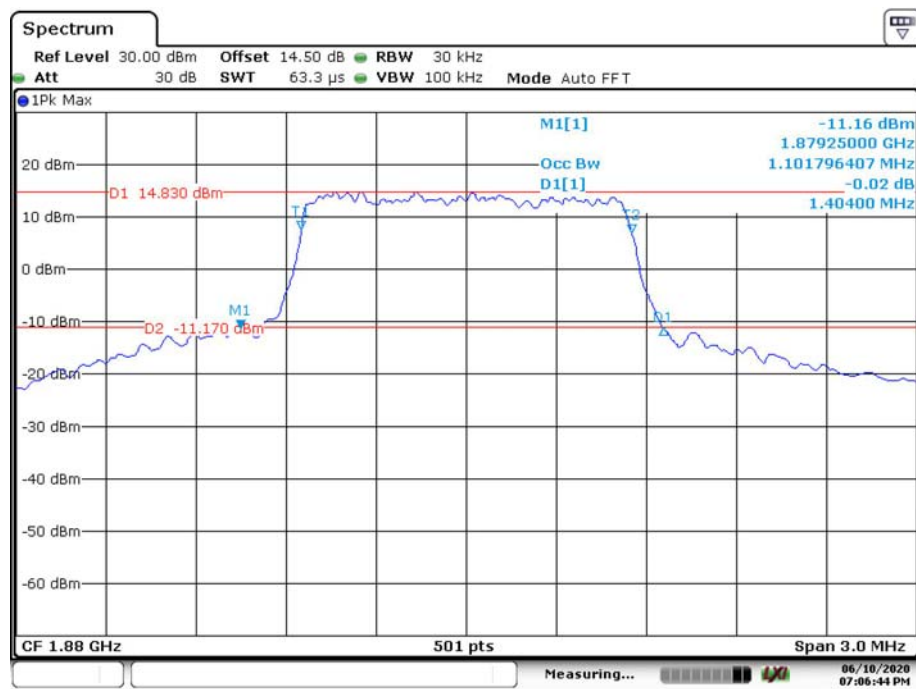
QPSK_15 MHz



QPSK_20 MHz

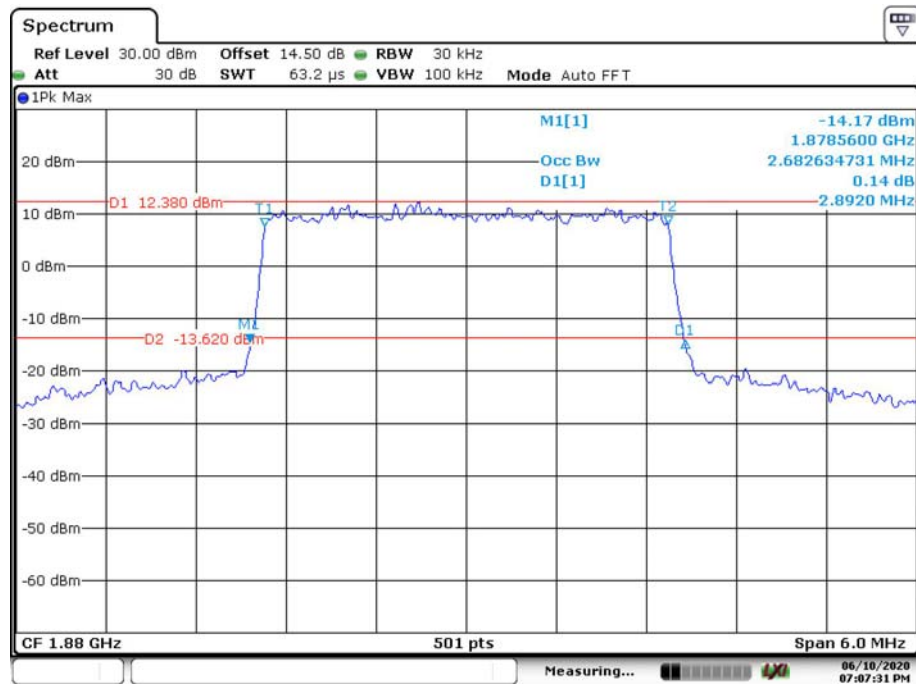


16QAM_1.4 MHz



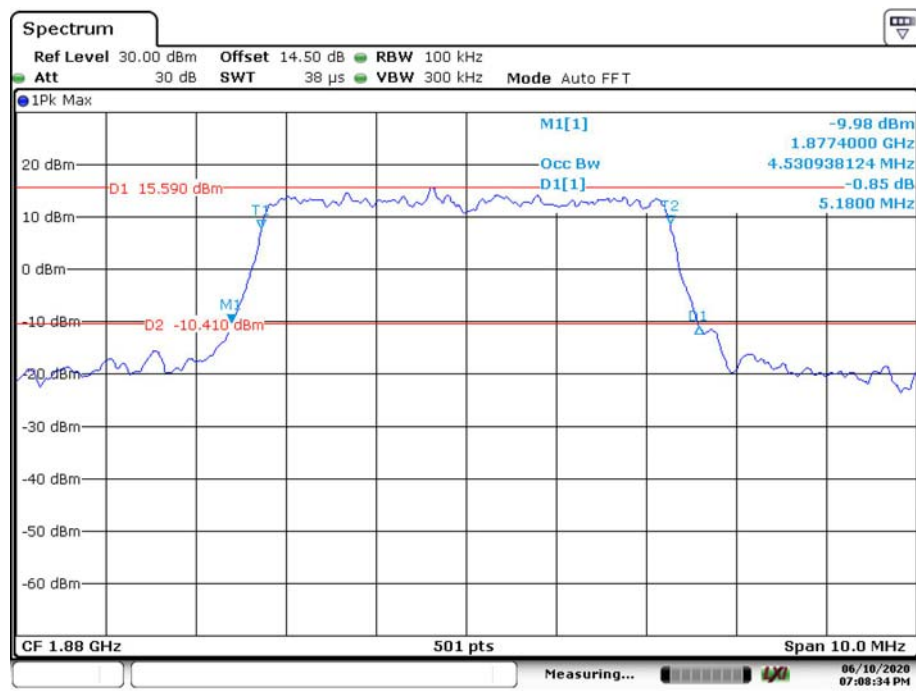
Date: 10.JUN.2020 19:06:44

16QAM_3 MHz



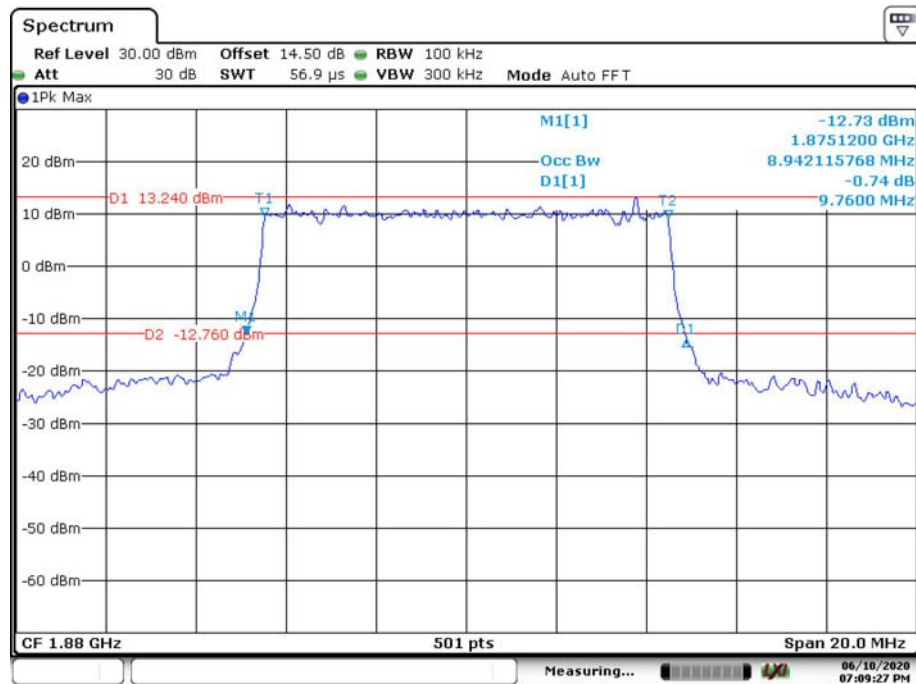
Date: 10.JUN.2020 19:07:32

16QAM_5 MHz



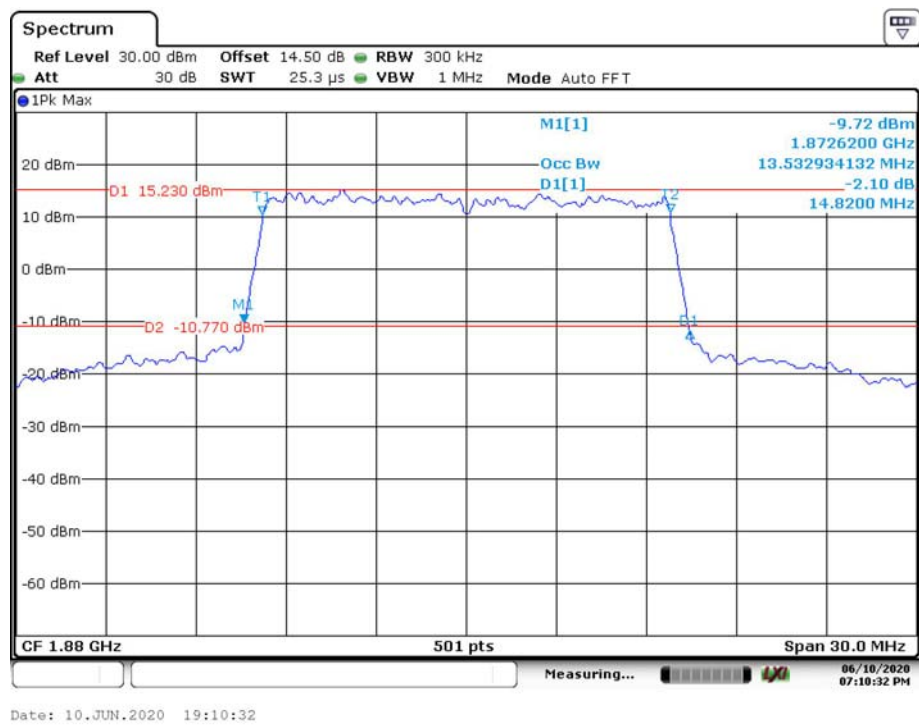
Date: 10.JUN.2020 19:08:34

16QAM_10 MHz

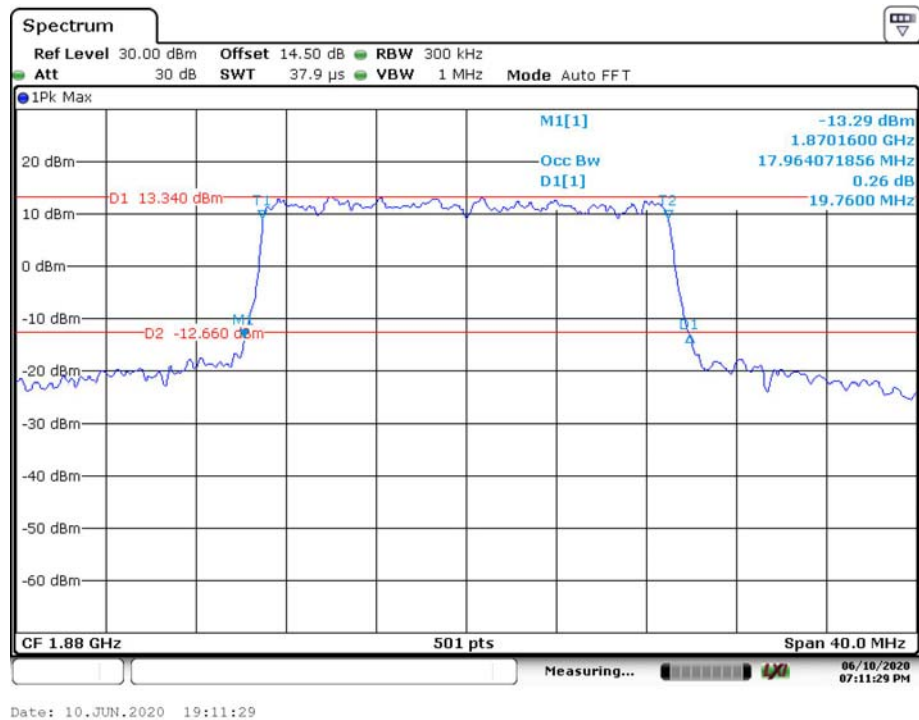


Date: 10.JUN.2020 19:09:27

16QAM_15 MHz

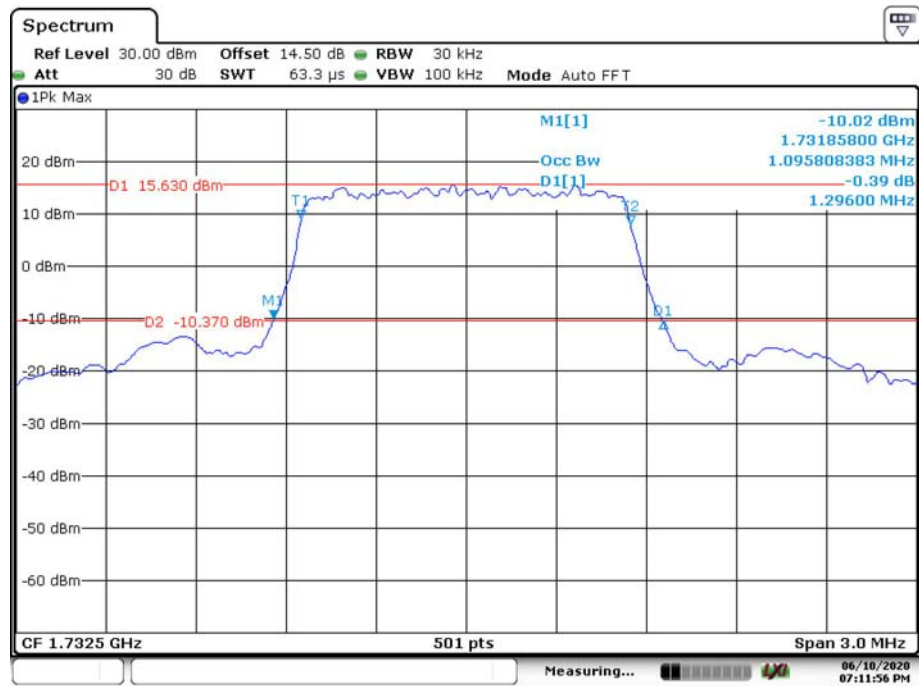


16QAM_20 MHz

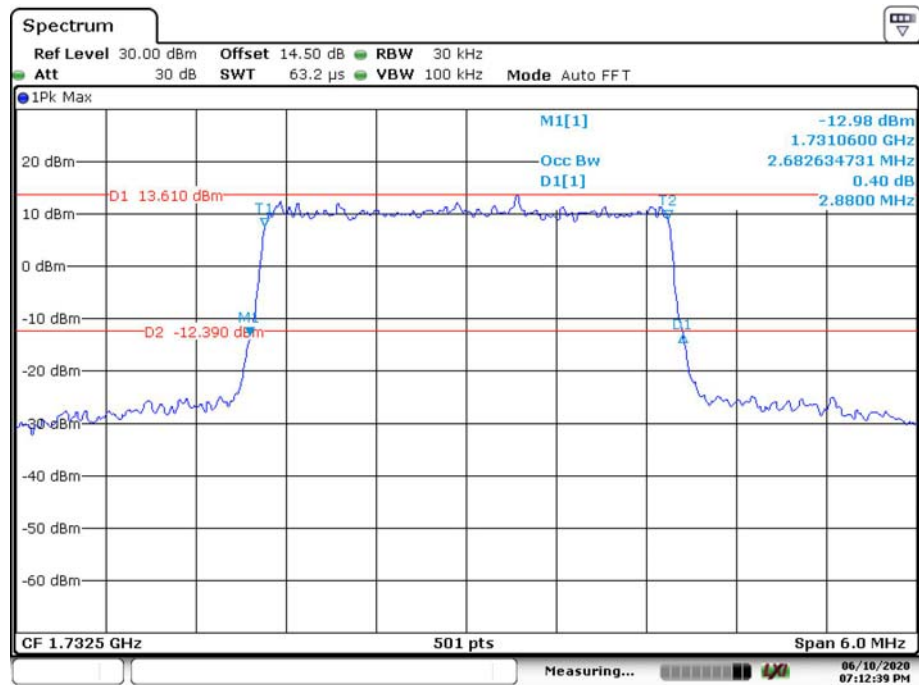


LTE Band 4

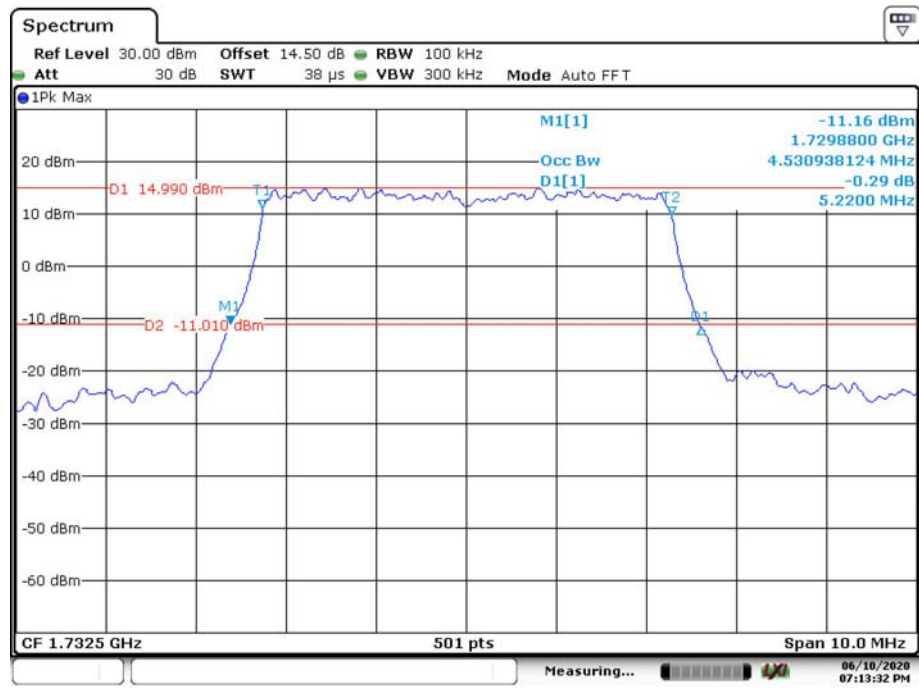
QPSK_1.4 MHz



QPSK_3 MHz

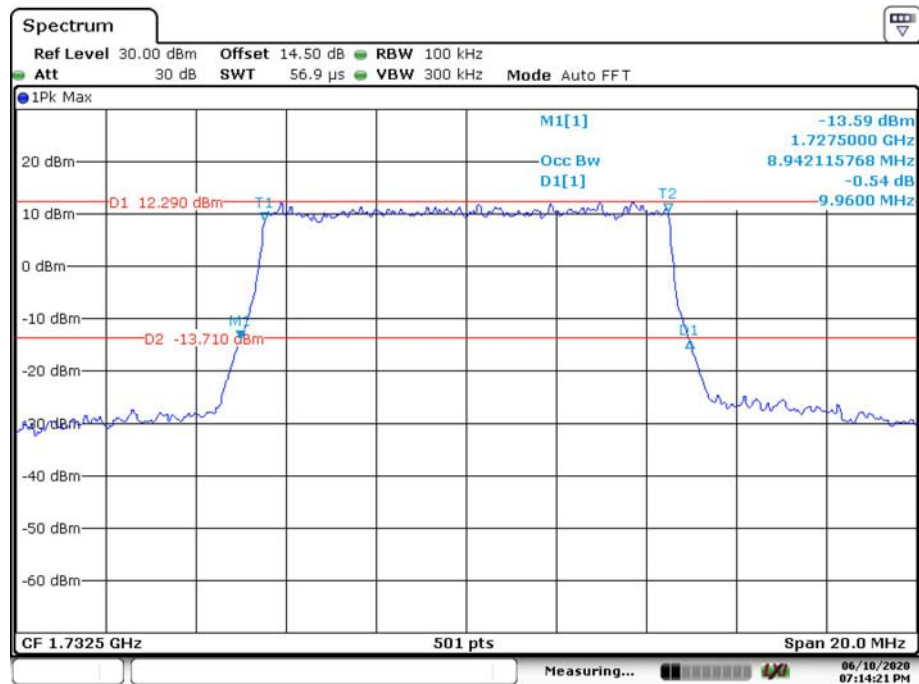


QPSK_5 MHz



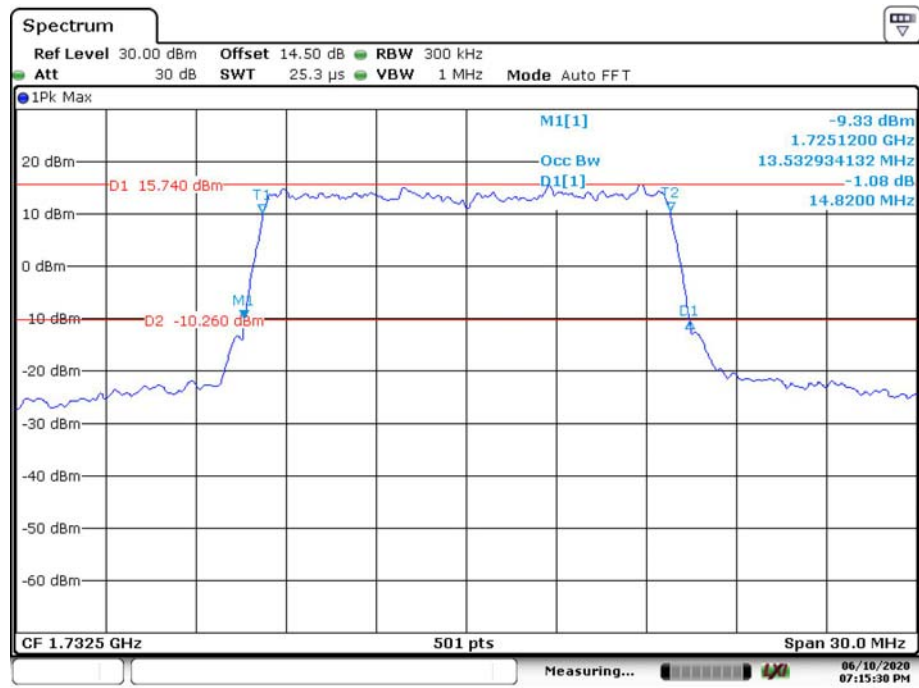
Date: 10.JUN.2020 19:13:32

QPSK_10 MHz



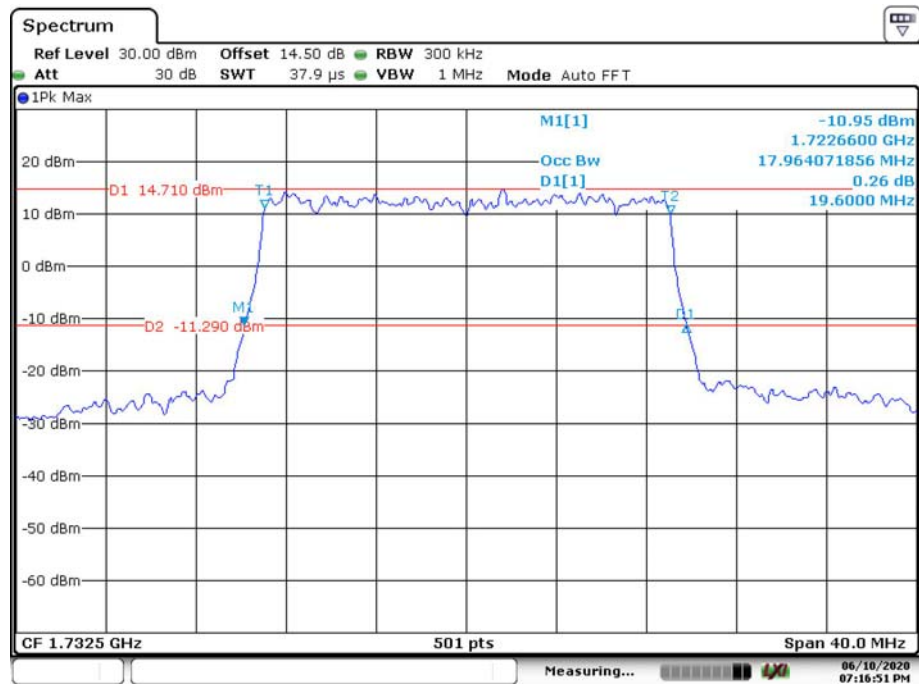
Date: 10.JUN.2020 19:14:21

QPSK_15 MHz



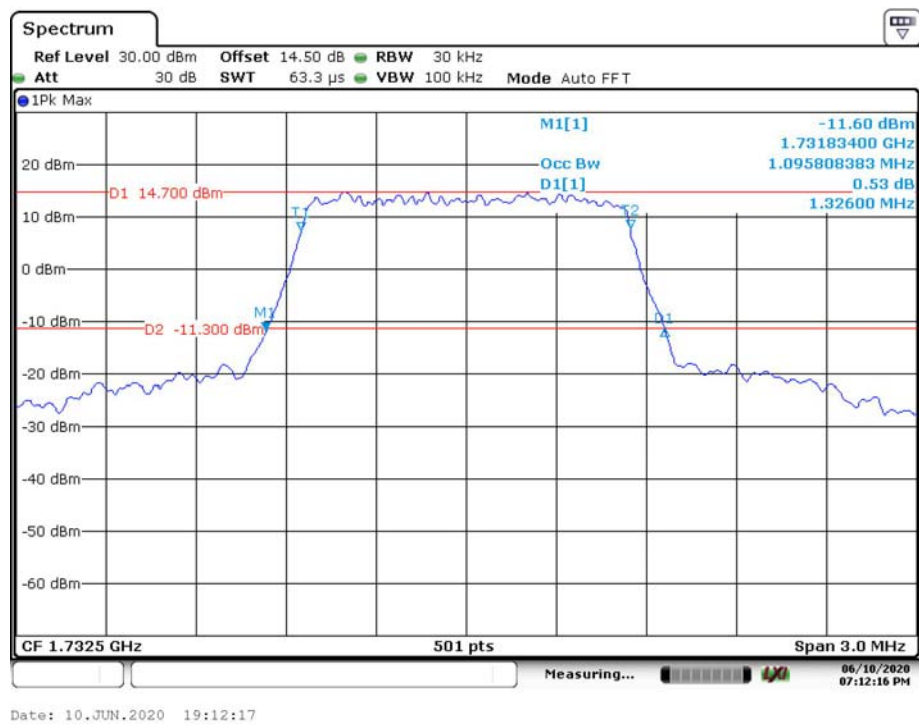
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QPSK_20 MHz

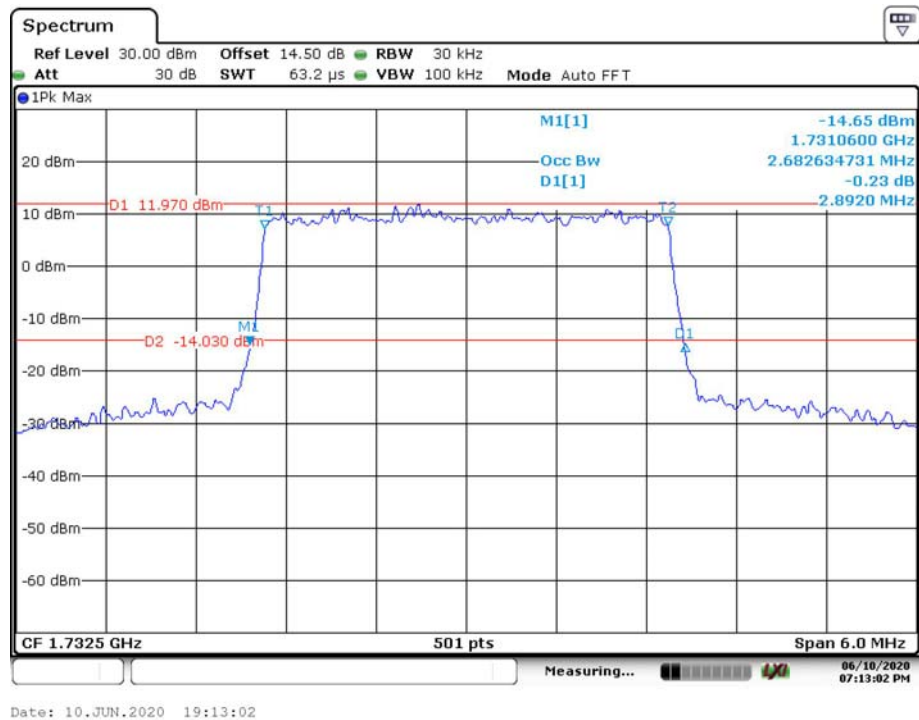


Date: 10.JUN.2020 19:16:52

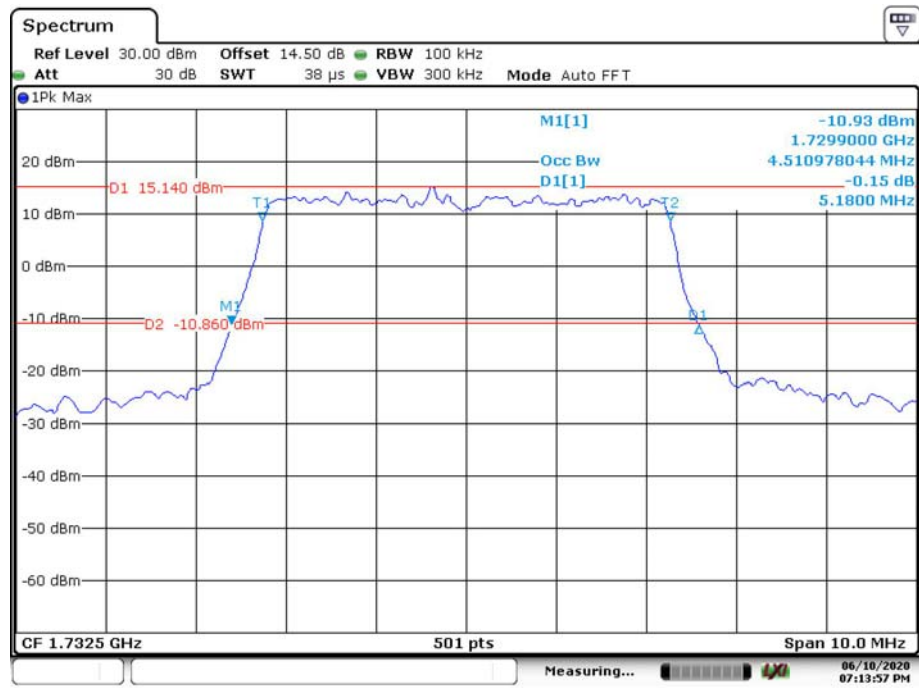
16QAM_1.4 MHz



16QAM_3 MHz

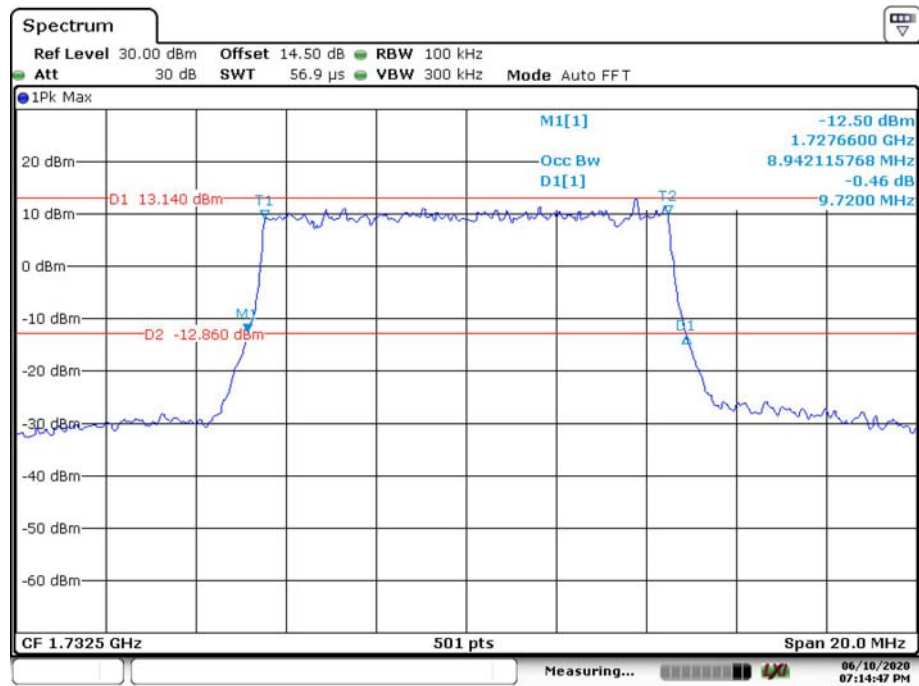


16QAM_5 MHz



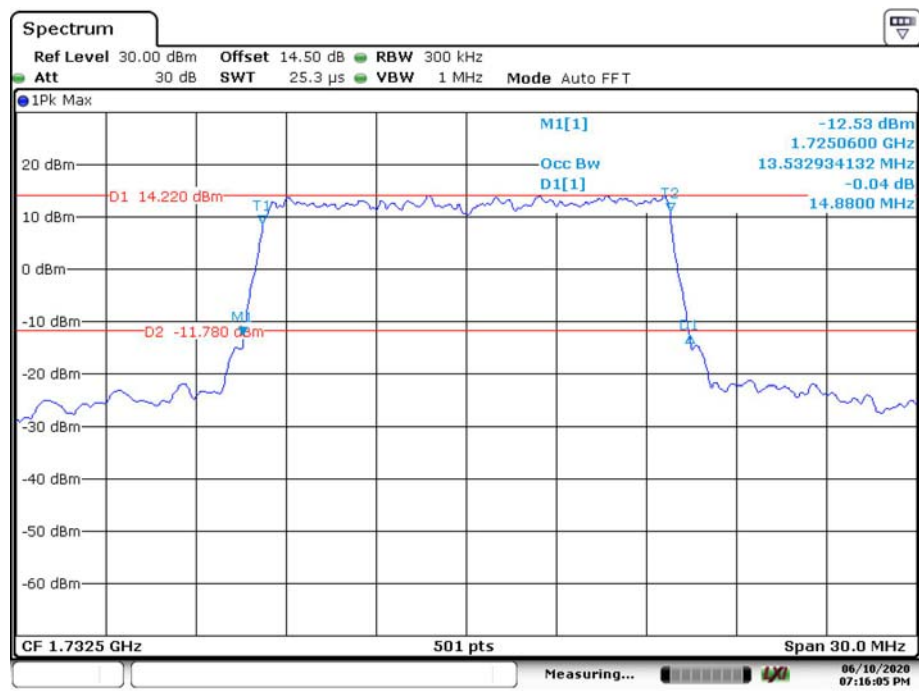
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16QAM_10 MHz



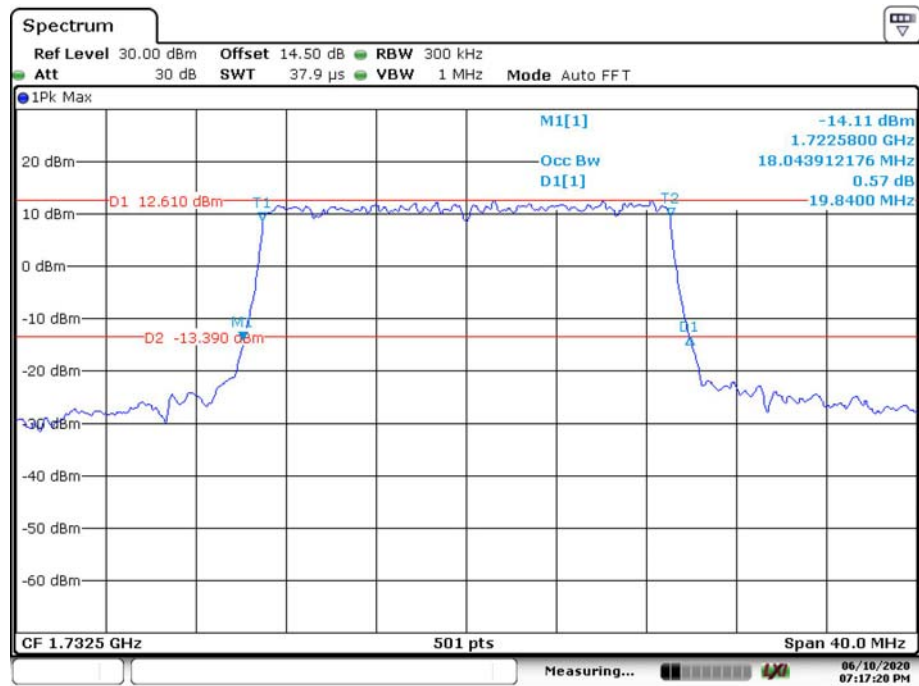
Date: 10.JUN.2020 19:14:47

16QAM_15 MHz



Date: 10.JUN.2020 19:16:05

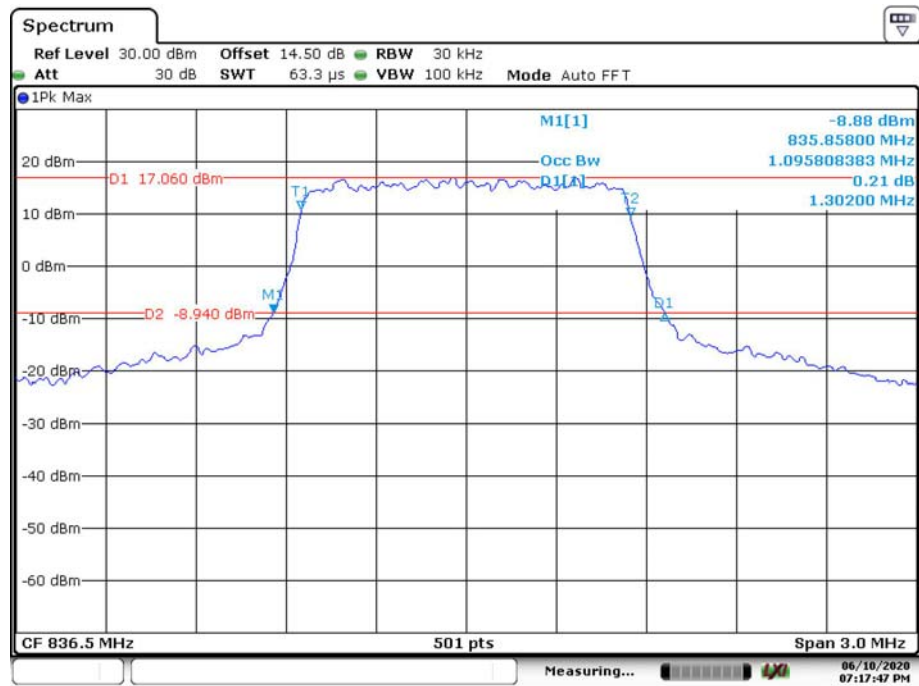
16QAM_20 MHz



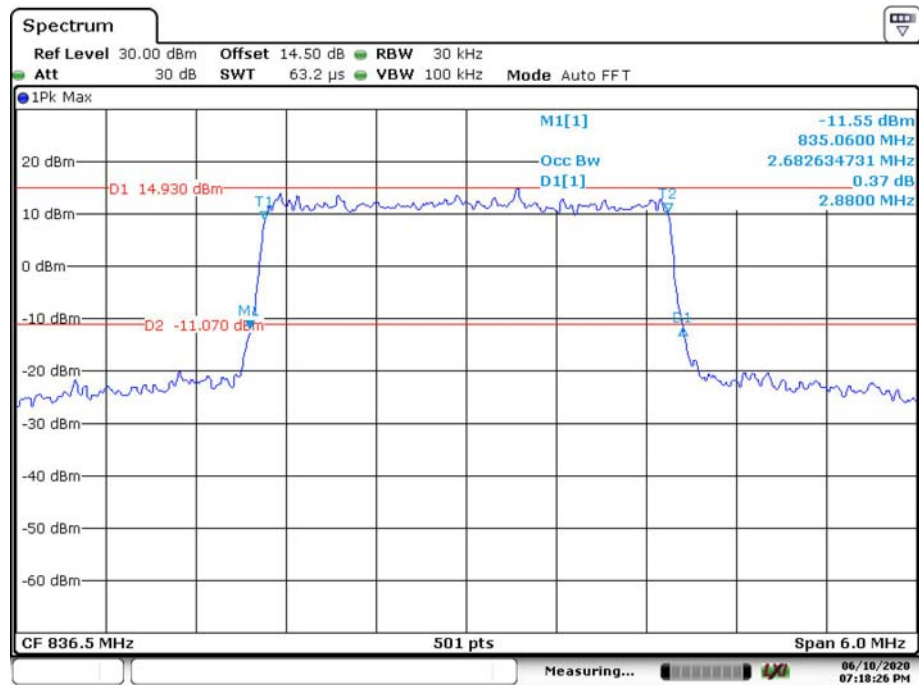
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LTE Band 5:

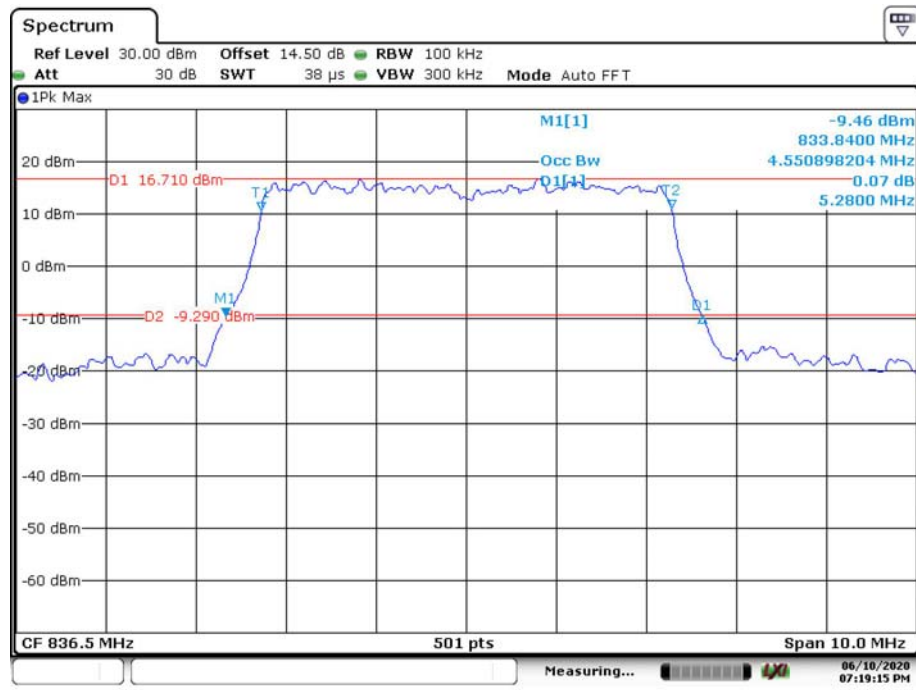
QPSK_1.4 MHz



QPSK_3 MHz

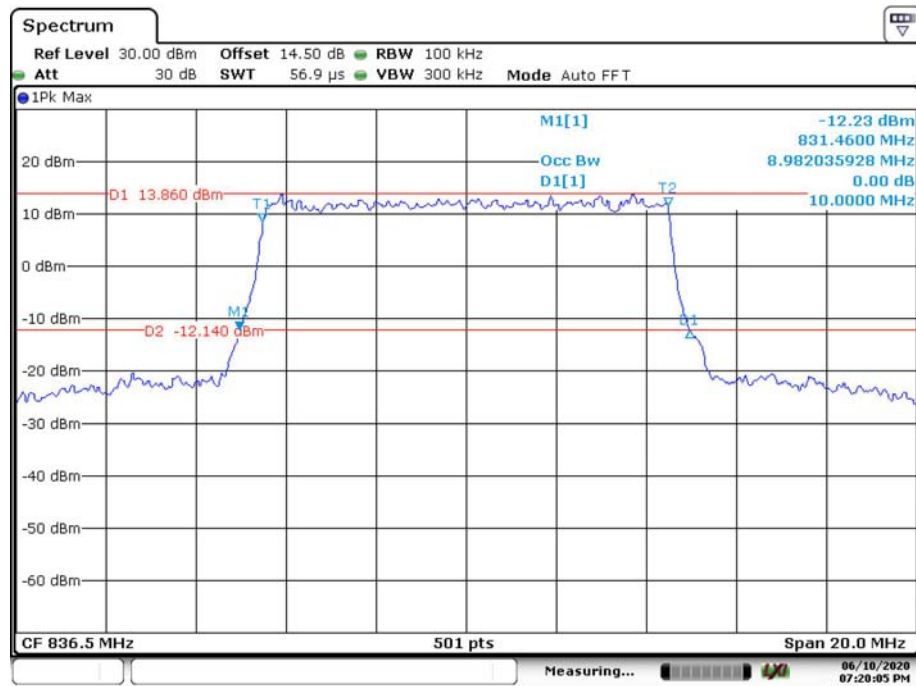


QPSK_5 MHz



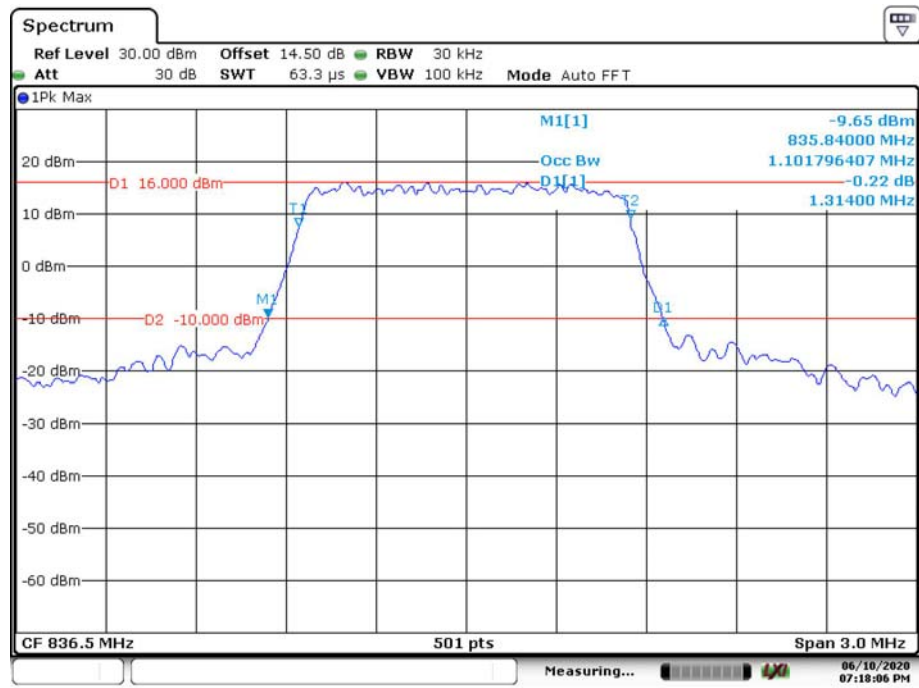
Date: 10.JUN.2020 19:19:16

QPSK_10 MHz



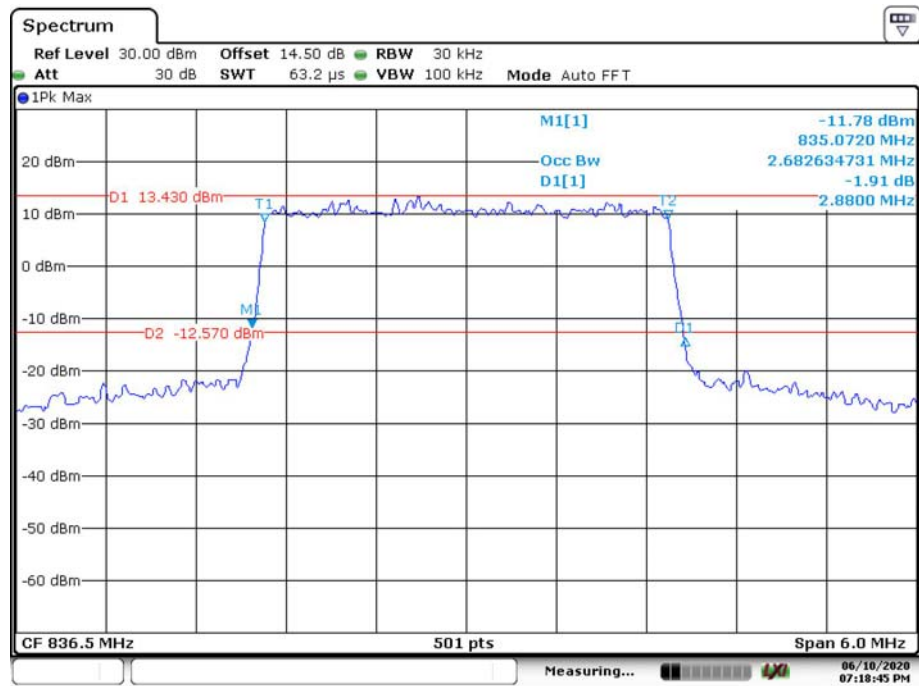
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16QAM_1.4 MHz



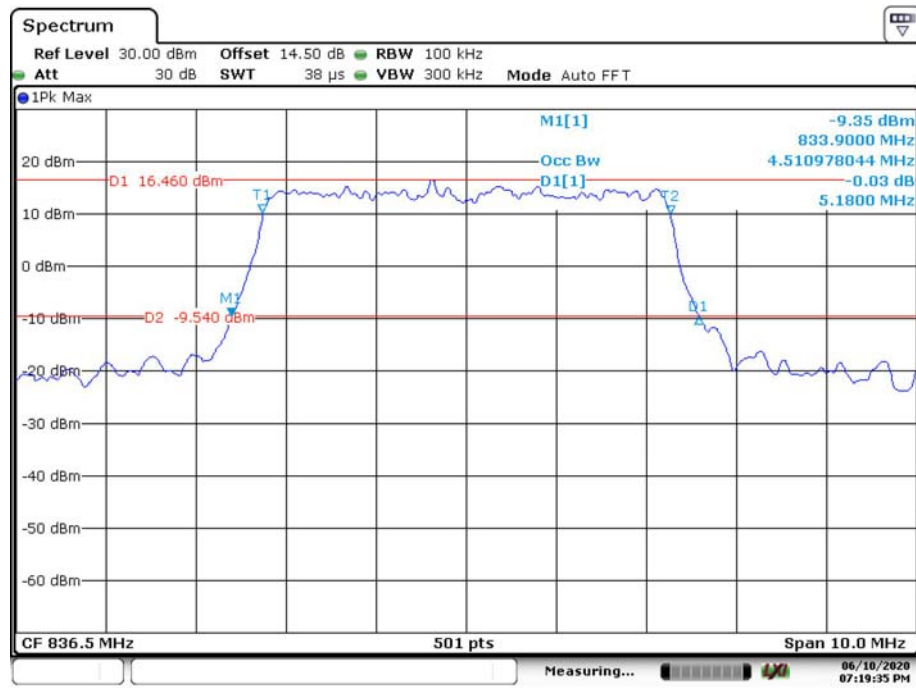
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16QAM_3 MHz



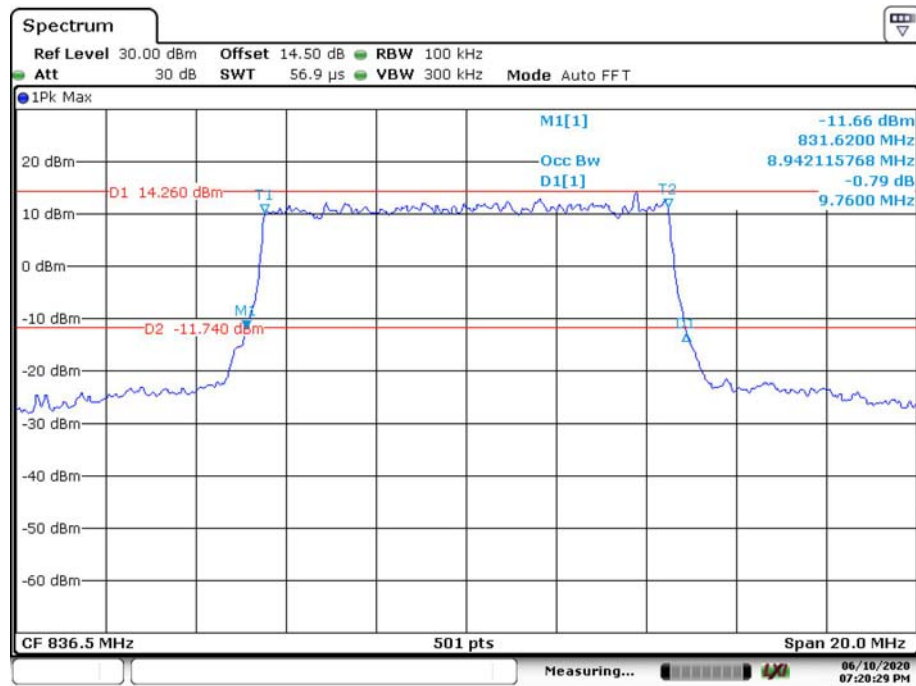
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16QAM_5 MHz



Date: 10.JUN.2020 19:19:35

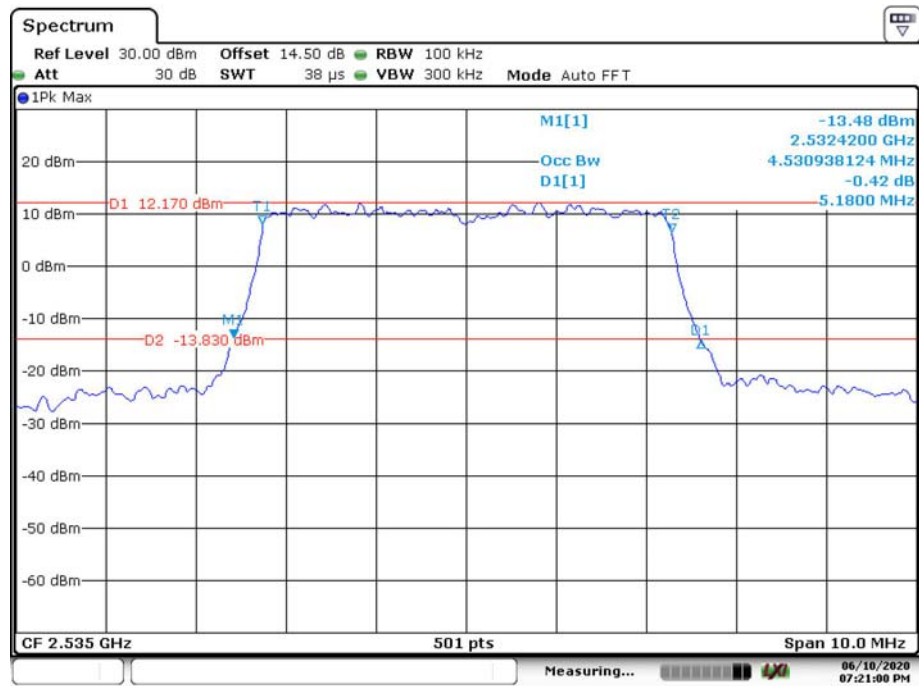
16QAM_10 MHz



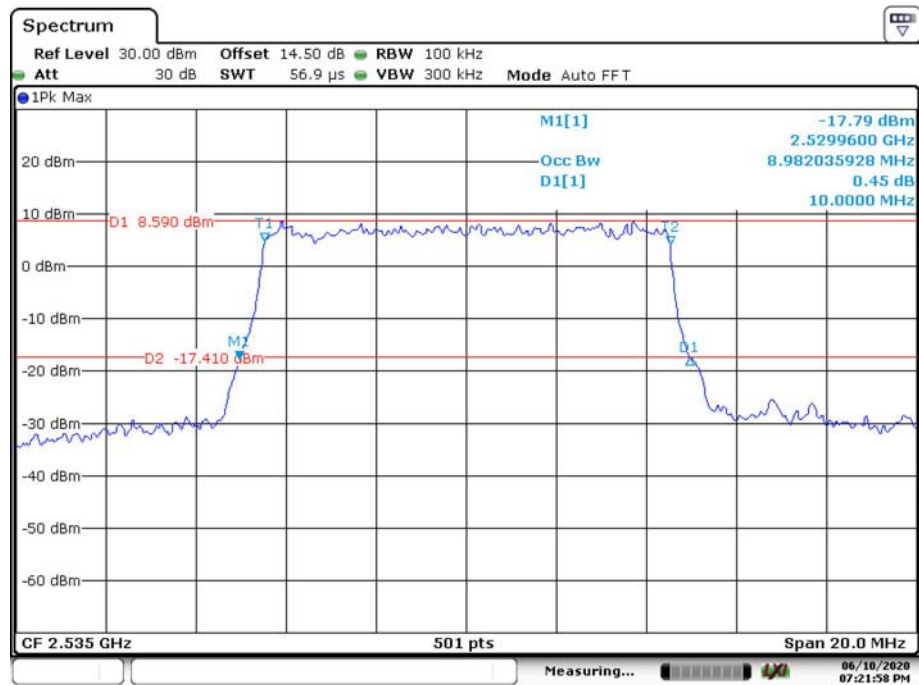
Date: 10.JUN.2020 19:20:30

LTE Band 7:

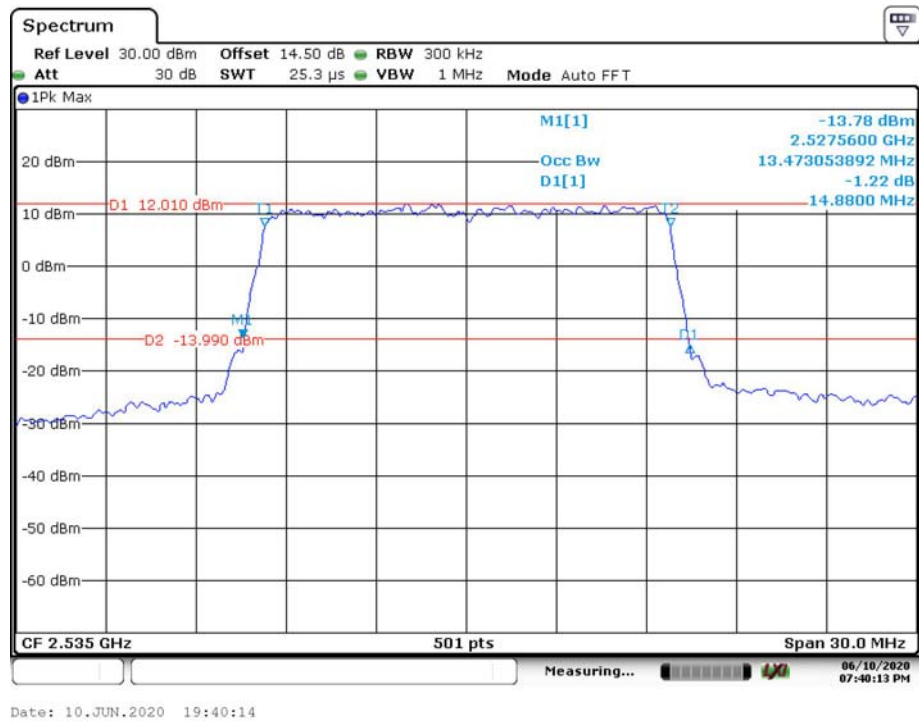
QPSK_5 MHz



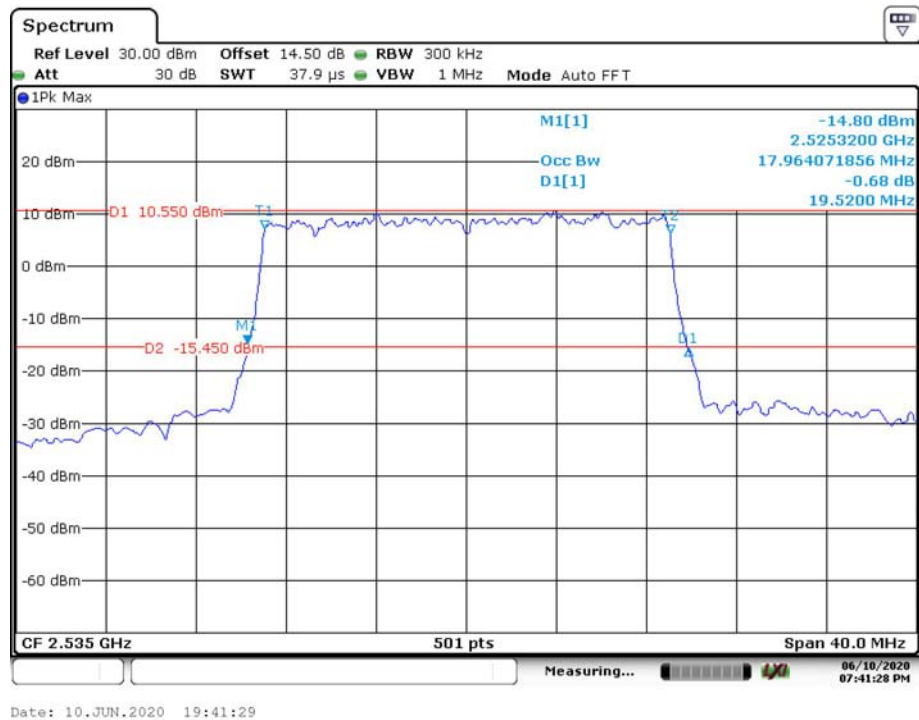
QPSK_10 MHz



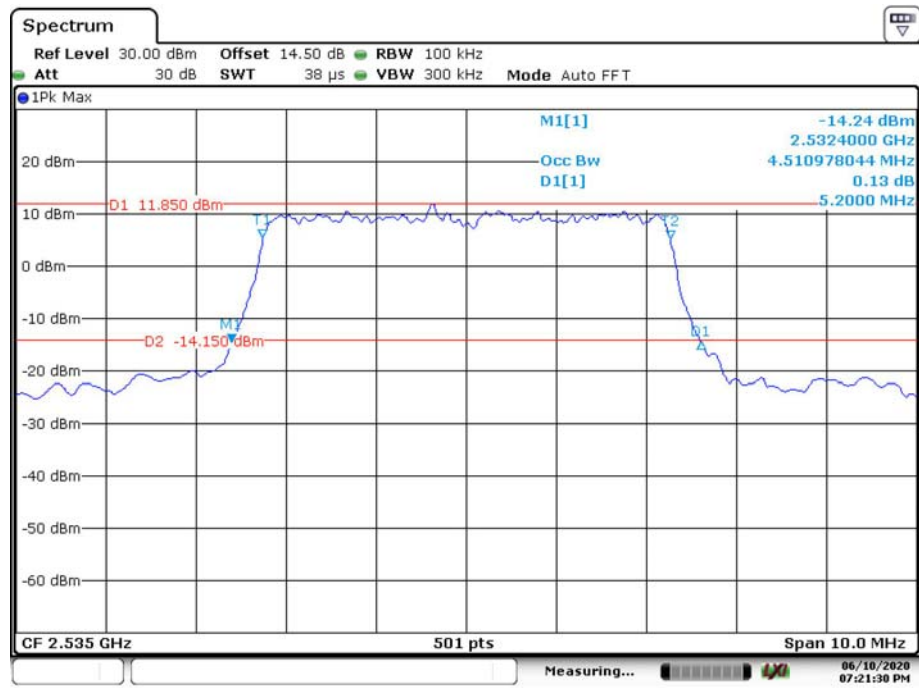
QPSK_15 MHz



QPSK_20 MHz

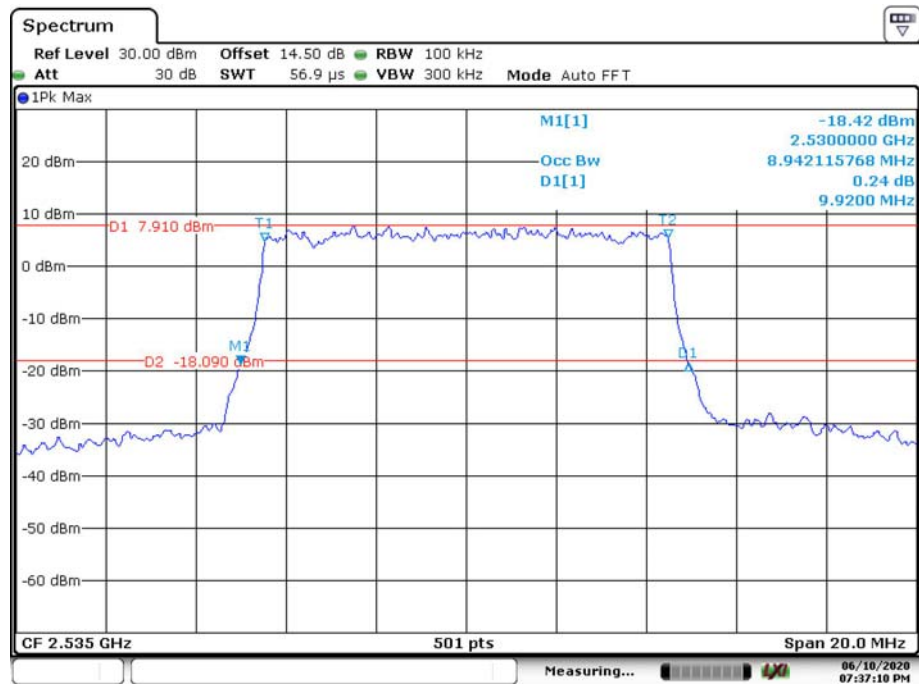


16QAM_5 MHz



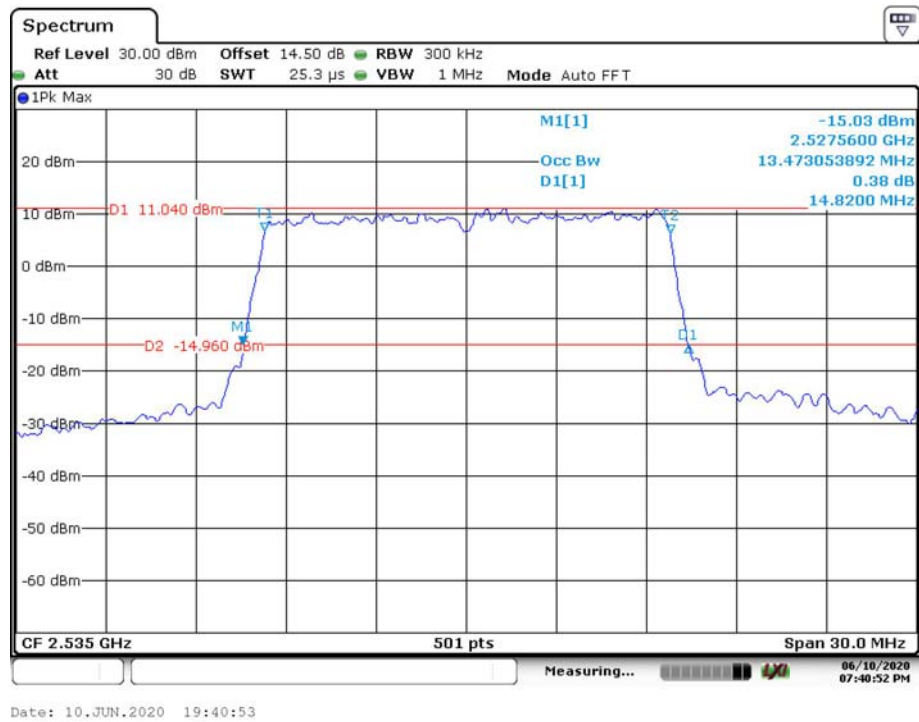
Date: 10.JUN.2020 19:21:31

16QAM_10 MHz

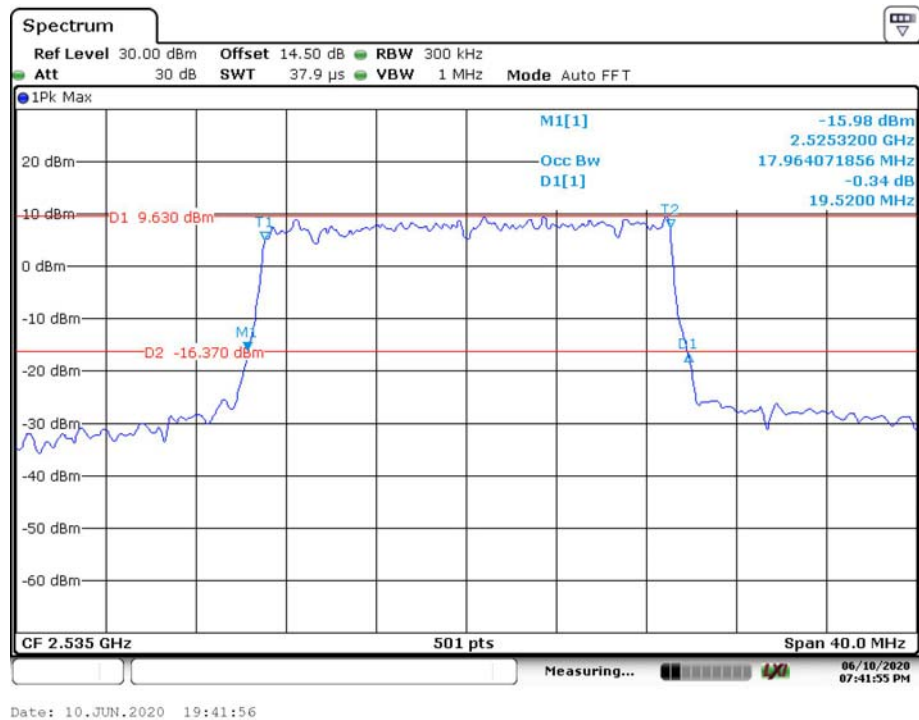


Date: 10.JUN.2020 19:37:11

16QAM_15 MHz

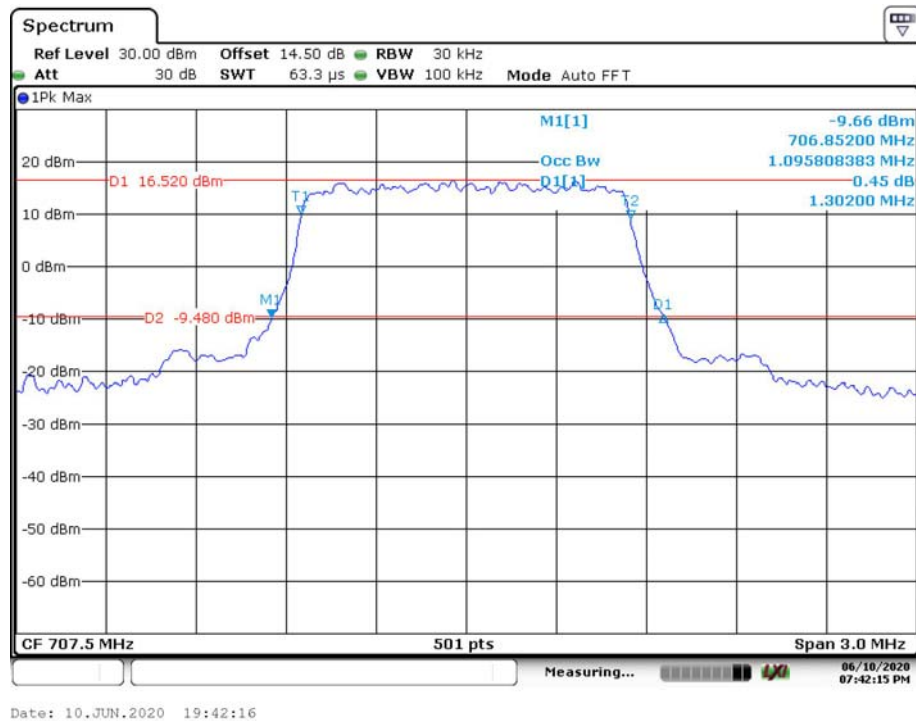


16QAM_20 MHz

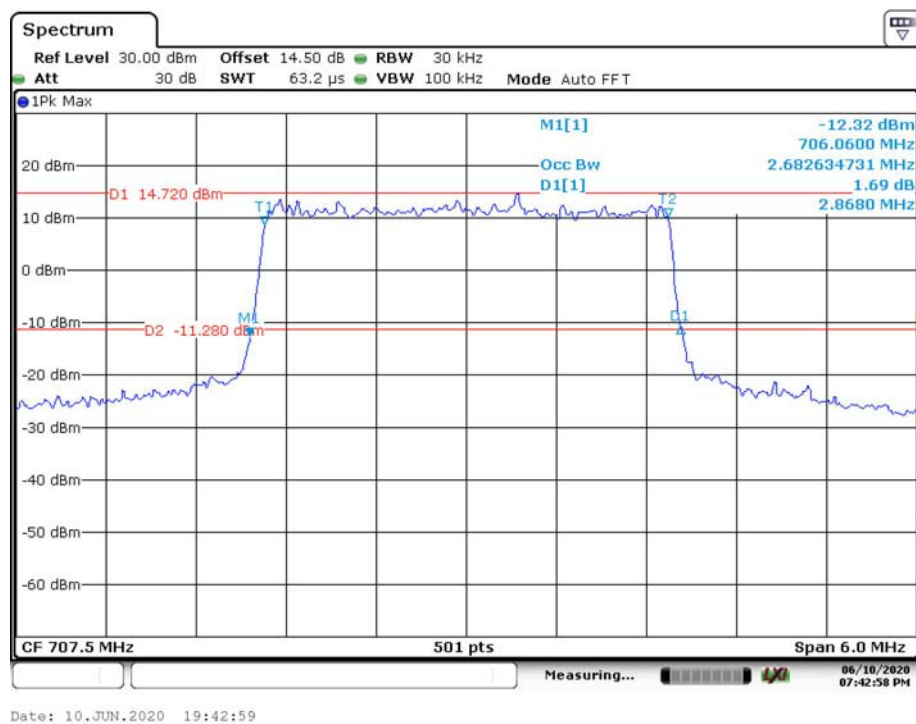


LTE Band 12

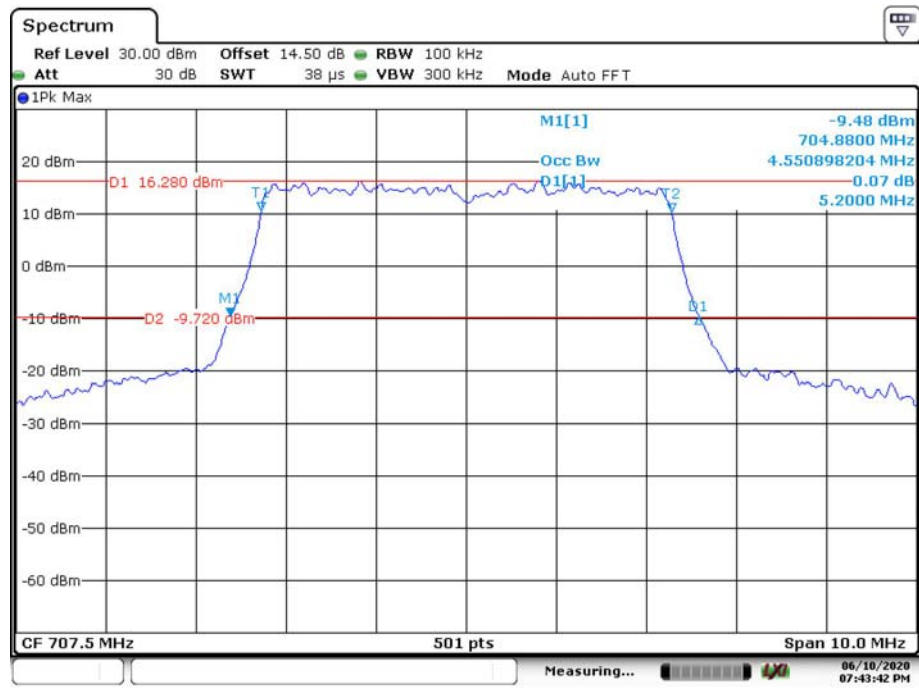
QPSK_1.4 MHz



QPSK_3 MHz

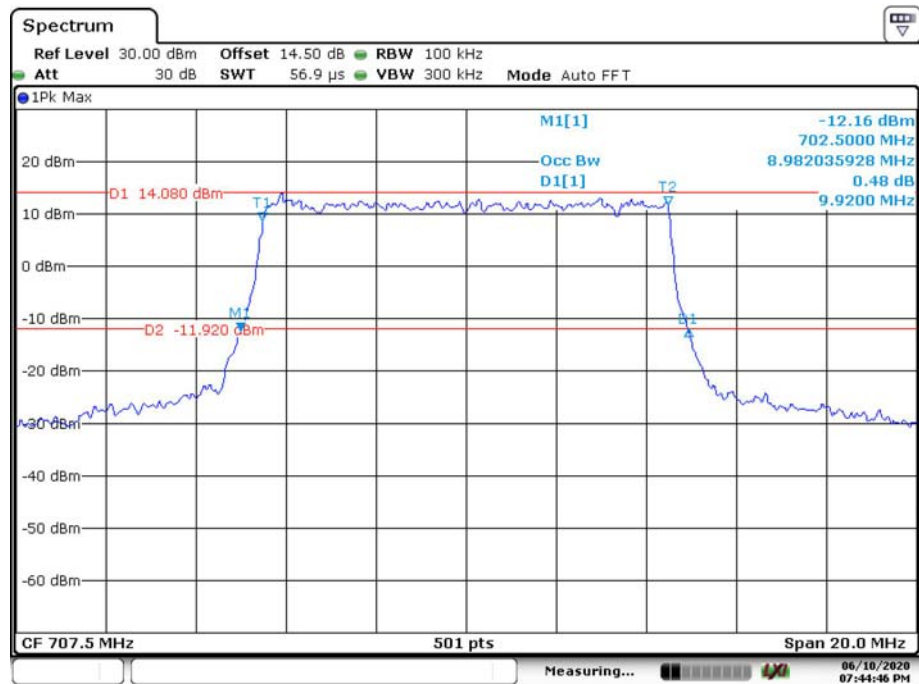


QPSK_5 MHz



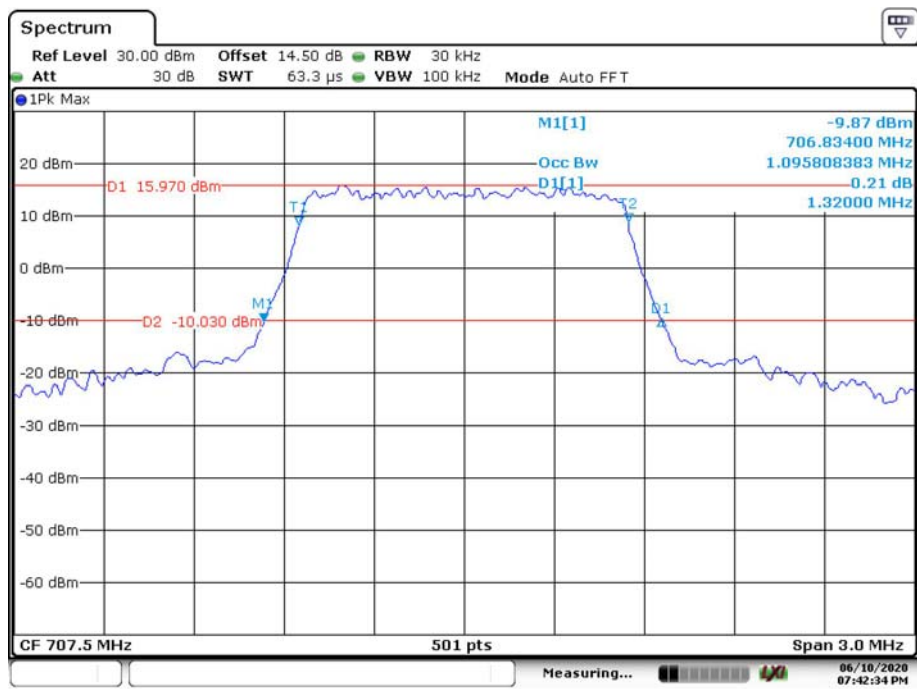
Date: 10.JUN.2020 19:43:43

QPSK_10 MHz

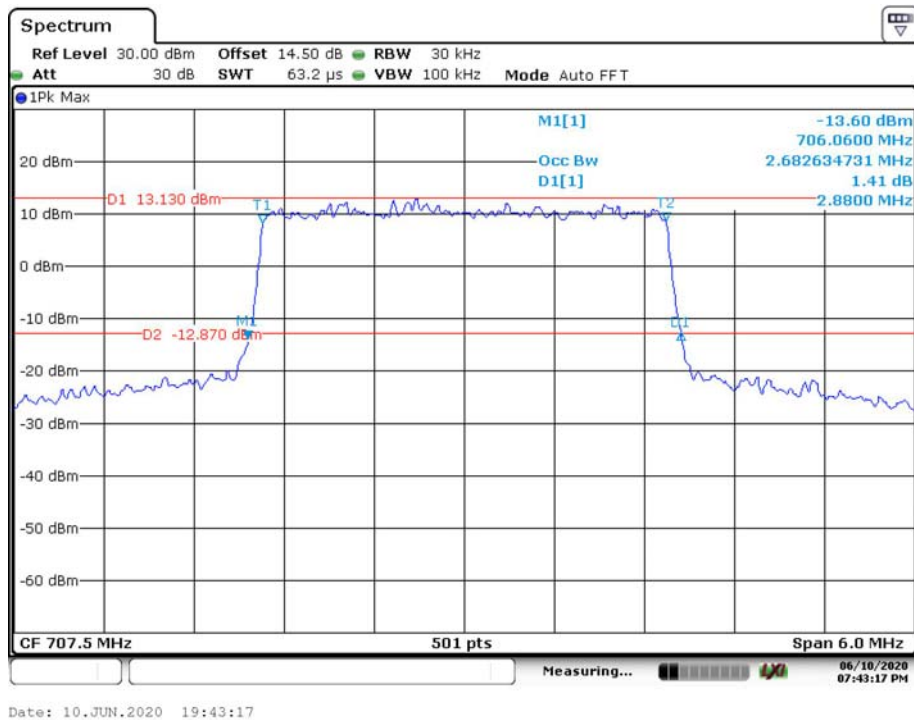


Date: 10.JUN.2020 19:44:47

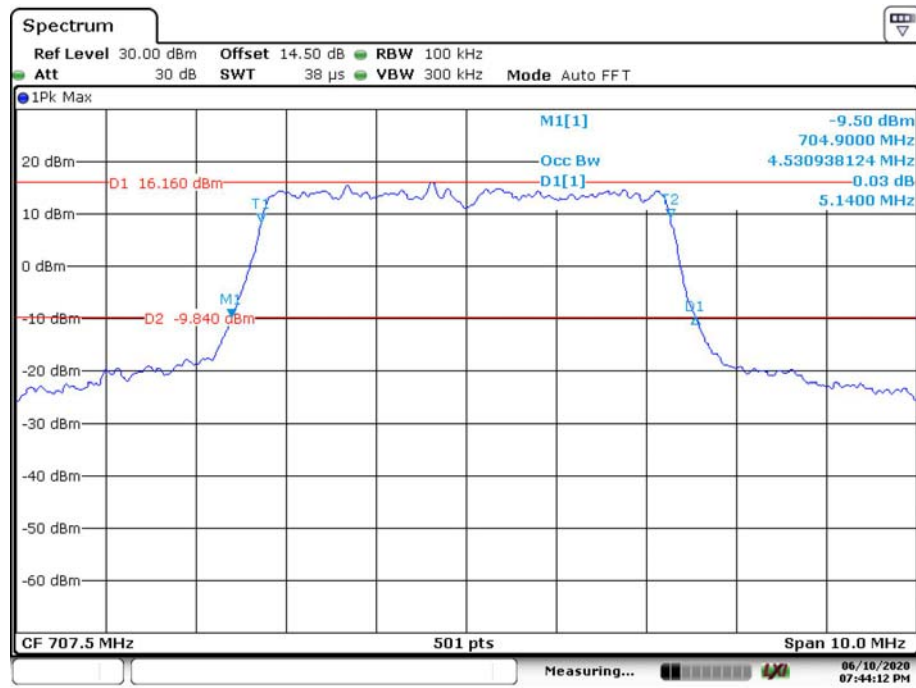
16QAM_1.4 MHz



16QAM_3 MHz

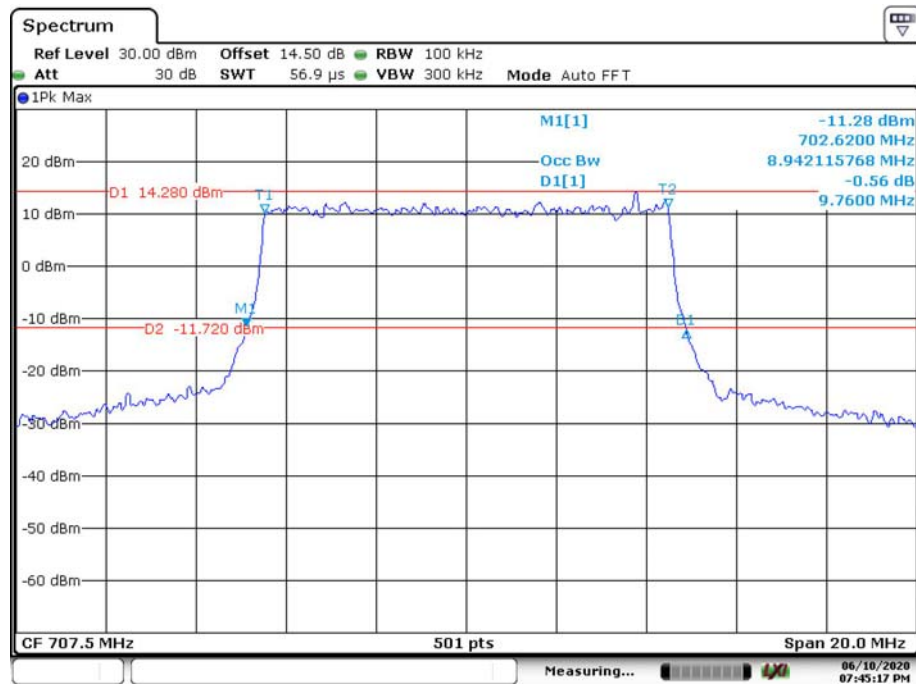


16QAM_5 MHz

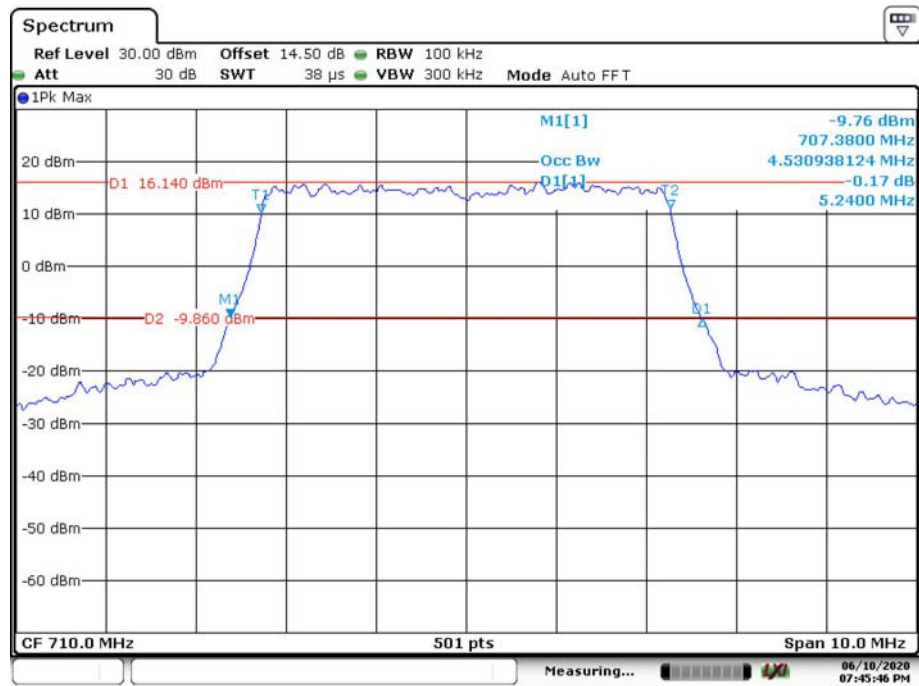


Date: 10.JUN.2020 19:44:13

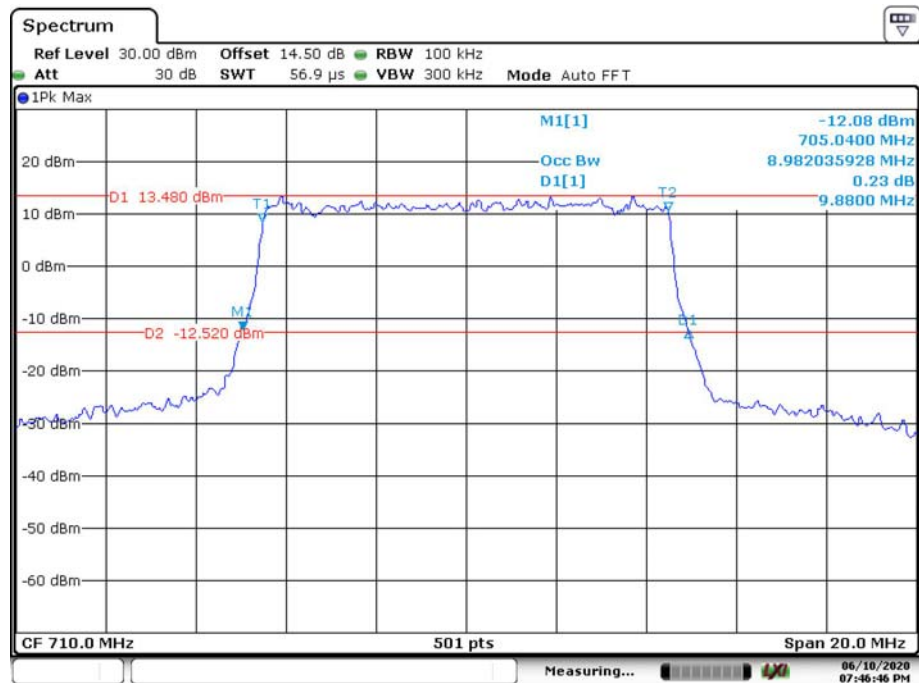
16QAM_10 MHz



Date: 10.JUN.2020 19:45:18

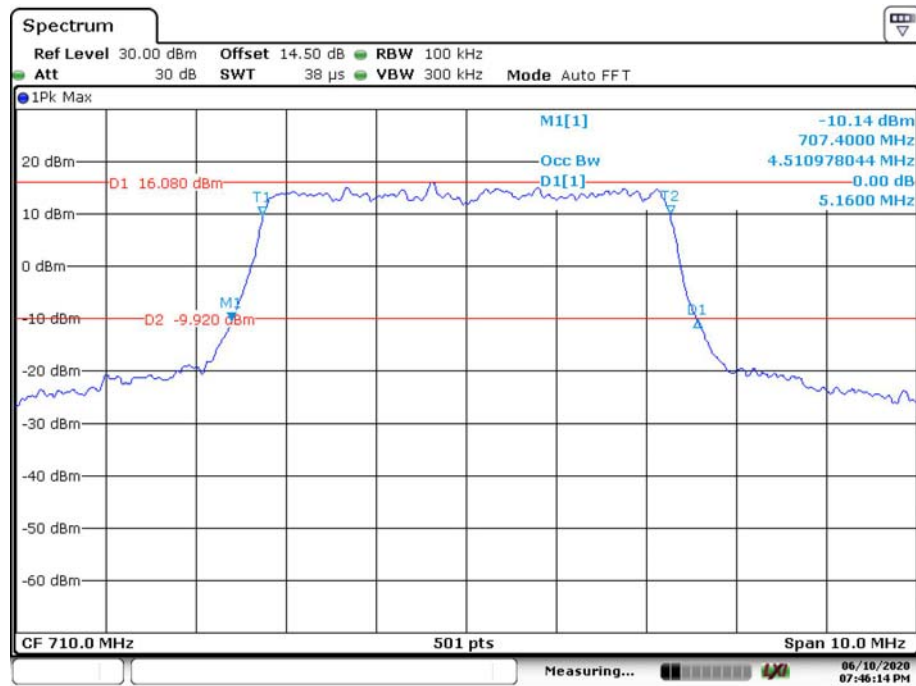
LTE Band 17:**QPSK_5 MHz**

Date: 10.JUN.2020 19:45:47

QPSK_10 MHz

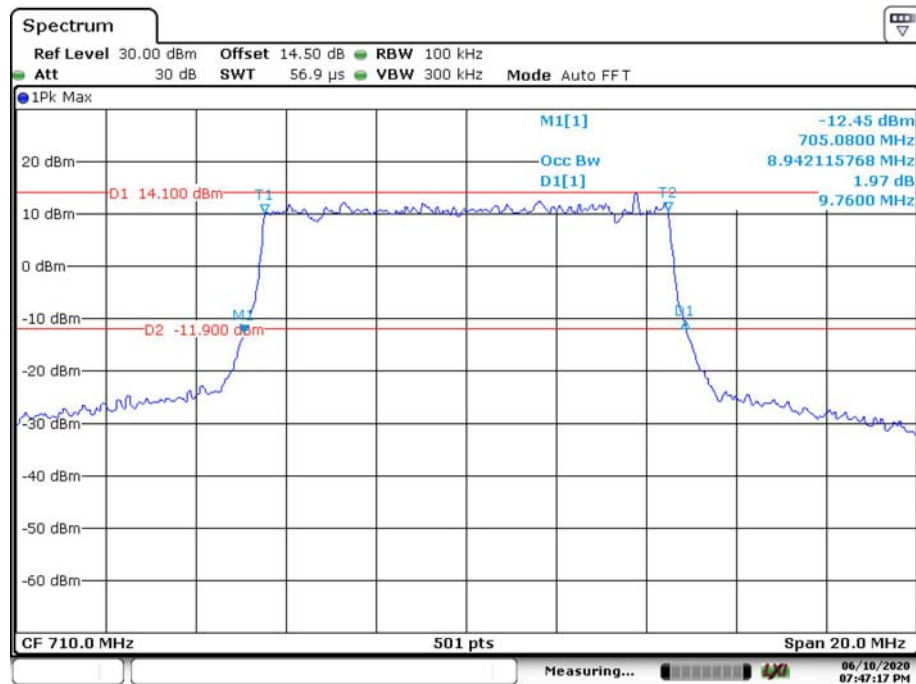
Date: 10.JUN.2020 19:46:46

16QAM_5 MHz



Date: 10.JUN.2020 19:46:15

16QAM_10 MHz



Date: 10.JUN.2020 19:47:17