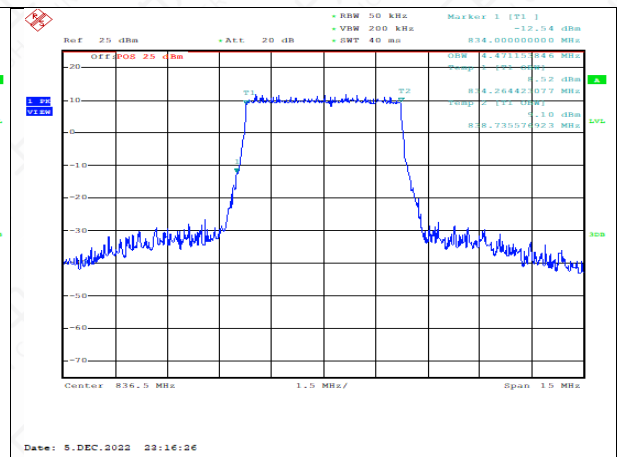
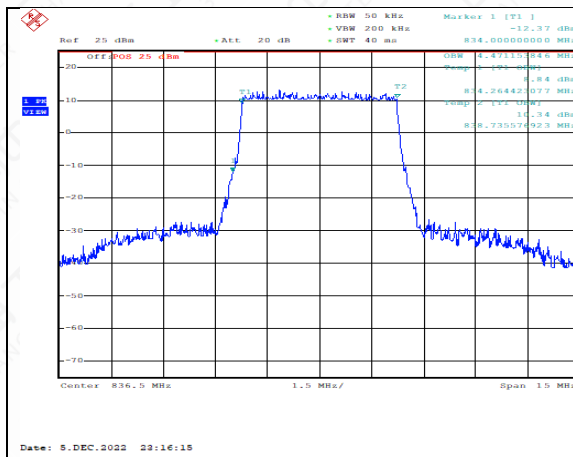


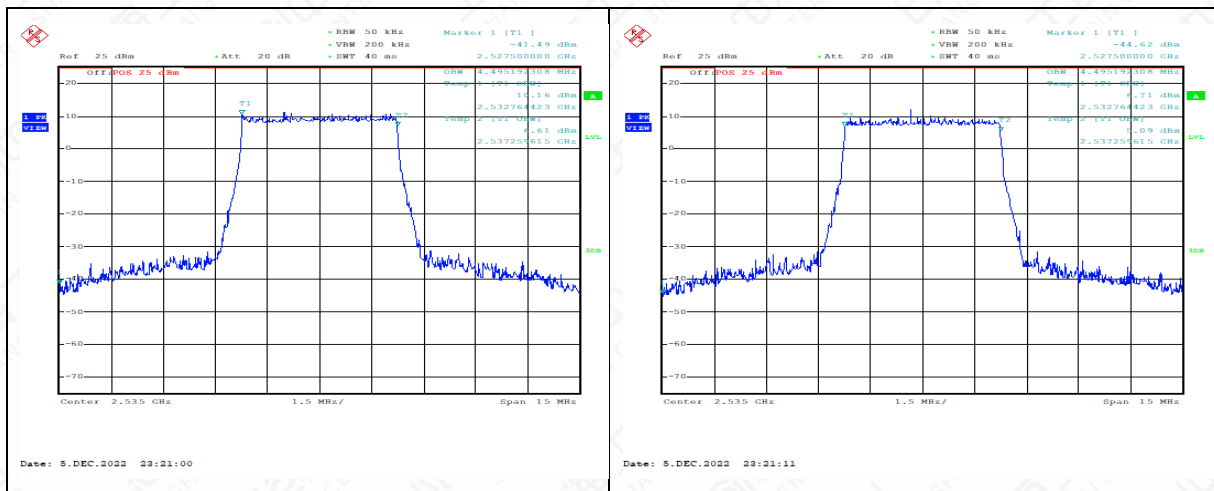


LTE band 5, 10MHz (99%)

Frequency(MHz)		Occupied Bandwidth (99%)(MHz)	
836.5	QPSK	16QAM	
	8.99	8.94	
QPSK(99% BW)		16QAM(99% BW)	
Ref 25 dBm, Alt 20 dB, BW 100 kHz, VMW 300 kHz, SFT 40 dB, Off Pos 25 dBm, T1 834.99018415 MHz, T2 835.00981585 MHz, Temp 1.177 dBm, R1 834.99730769 MHz, R2 835.01269231 MHz, S10, S20, S30, S40, S50, S60, S70, S80, S90, S100, S110, S120, S130, S140, S150, S160, S170, S180, S190, S200, S210, S220, S230, S240, S250, S260, S270, S280, S290, S300, S310, S320, S330, S340, S350, S360, S370, S380, S390, S400, S410, S420, S430, S440, S450, S460, S470, S480, S490, S500, S510, S520, S530, S540, S550, S560, S570, S580, S590, S600, S610, S620, S630, S640, S650, S660, S670, S680, S690, S700, S710, S720, S730, S740, S750, S760, S770, S780, S790, S800, S810, S820, S830, S840, S850, S860, S870, S880, S890, S900, S910, S920, S930, S940, S950, S960, S970, S980, S990, S1000, S1010, S1020, S1030, S1040, S1050, S1060, S1070, S1080, S1090, S1100, S1110, S1120, S1130, S1140, S1150, S1160, S1170, S1180, S1190, S1200, S1210, S1220, S1230, S1240, S1250, S1260, S1270, S1280, S1290, S1300, S1310, S1320, S1330, S1340, S1350, S1360, S1370, S1380, S1390, S1400, S1410, S1420, S1430, S1440, S1450, S1460, S1470, S1480, S1490, S1500, S1510, S1520, S1530, S1540, S1550, S1560, S1570, S1580, S1590, S1600, S1610, S1620, S1630, S1640, S1650, S1660, S1670, S1680, S1690, S1700, S1710, S1720, S1730, S1740, S1750, S1760, S1770, S1780, S1790, S1800, S1810, S1820, S1830, S1840, S1850, S1860, S1870, S1880, S1890, S1900, S1910, S1920, S1930, S1940, S1950, S1960, S1970, S1980, S1990, S2000, S2010, S2020, S2030, S2040, S2050, S2060, S2070, S2080, S2090, S2100, S2110, S2120, S2130, S2140, S2150, S2160, S2170, S2180, S2190, S2200, S2210, S2220, S2230, S2240, S2250, S2260, S2270, S2280, S2290, S2300, S2310, S2320, S2330, S2340, S2350, S2360, S2370, S2380, S2390, S2400, S2410, S2420, S2430, S2440, S2450, S2460, S2470, S2480, S2490, S2500, S2510, S2520, S2530, S2540, S2550, S2560, S2570, S2580, S2590, S2600, S2610, S2620, S2630, S2640, S2650, S2660, S2670, S2680, S2690, S2700, S2710, S2720, S2730, S2740, S2750, S2760, 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S18680, S18690, S18700, S18710, S18720, S18730, S18740, S18750, S18760, S18770, S			

LTE band 7, 5MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%)(MHz)	
2535	QPSK	16QAM
	4.5	4.5
QPSK(99% BW)	16QAM(99% BW)	

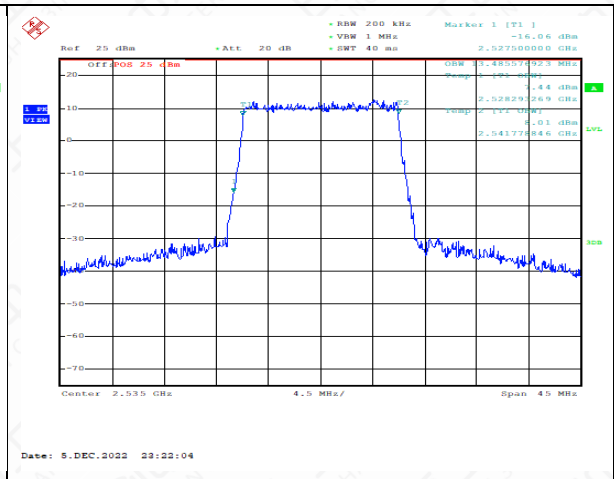
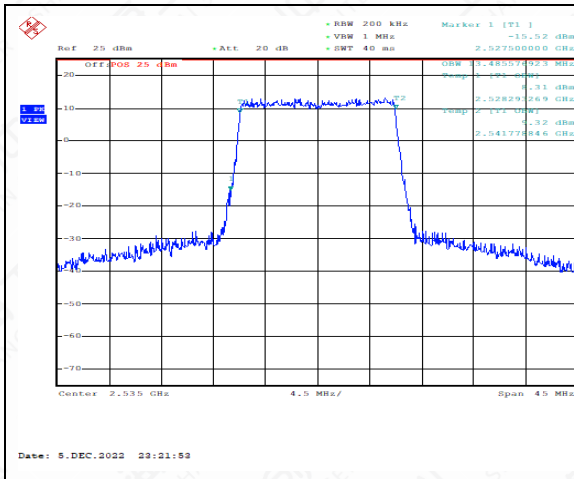


LTE band 7, 10MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%)(MHz)	
2535	QPSK	16QAM
	8.94	8.94
QPSK(99% BW)	16QAM(99% BW)	
Ref: 25 dBm Att: 20 dB RBW: 100 kHz VSW: 300 kHz SWT: 40 ms Marker 1 [T1] -33.04 dBm 2.537500000 GHz Off POS 25 dBm Peak: -33.04 dBm 2.534230692 MHz 2.53552846 GHz 2.539473154 GHz Center 2.535 GHz 3 MHz/ Span 30 MHz	Ref: 25 dBm Att: 20 dB RBW: 100 kHz VSW: 300 kHz SWT: 40 ms Marker 1 [T1] -33.88 dBm 2.537500000 GHz Off POS 25 dBm Peak: -33.88 dBm 2.534230692 MHz 2.53552846 GHz 2.539473154 GHz Center 2.535 GHz 3 MHz/ Span 30 MHz	
Date: 5.DEC.2022 23:21:27		

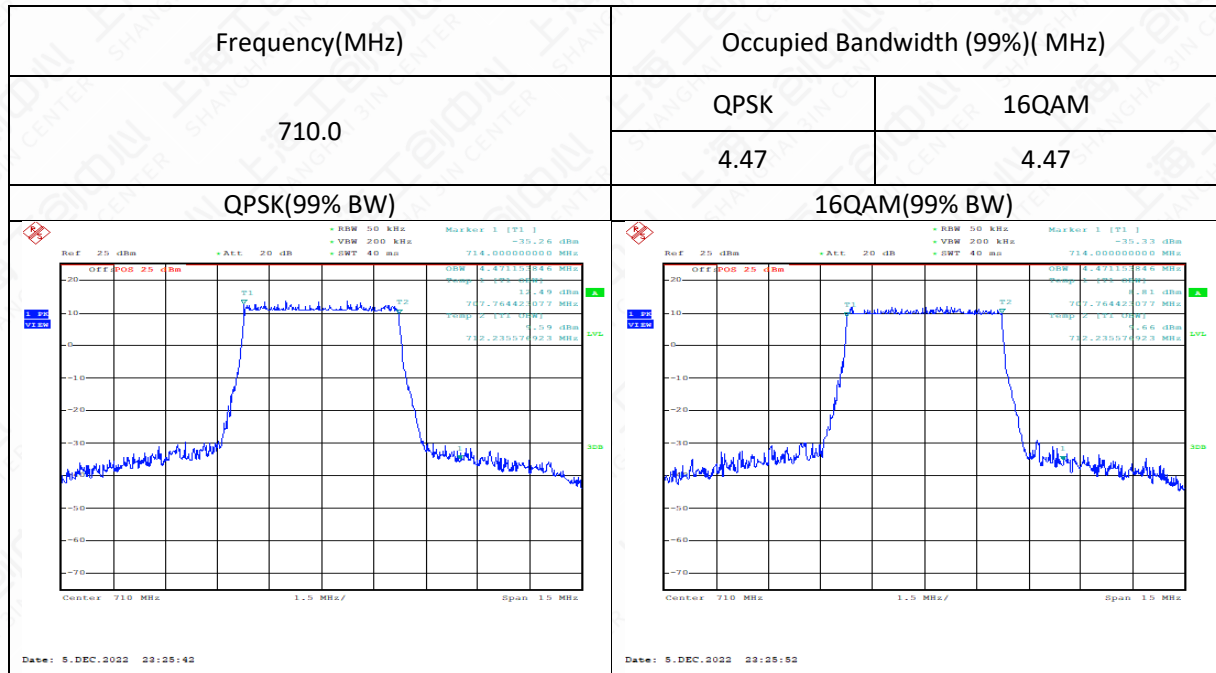
LTE band 7, 15MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%)(MHz)	
2535	QPSK	16QAM
	13.49	13.49
QPSK(99% BW)	16QAM(99% BW)	

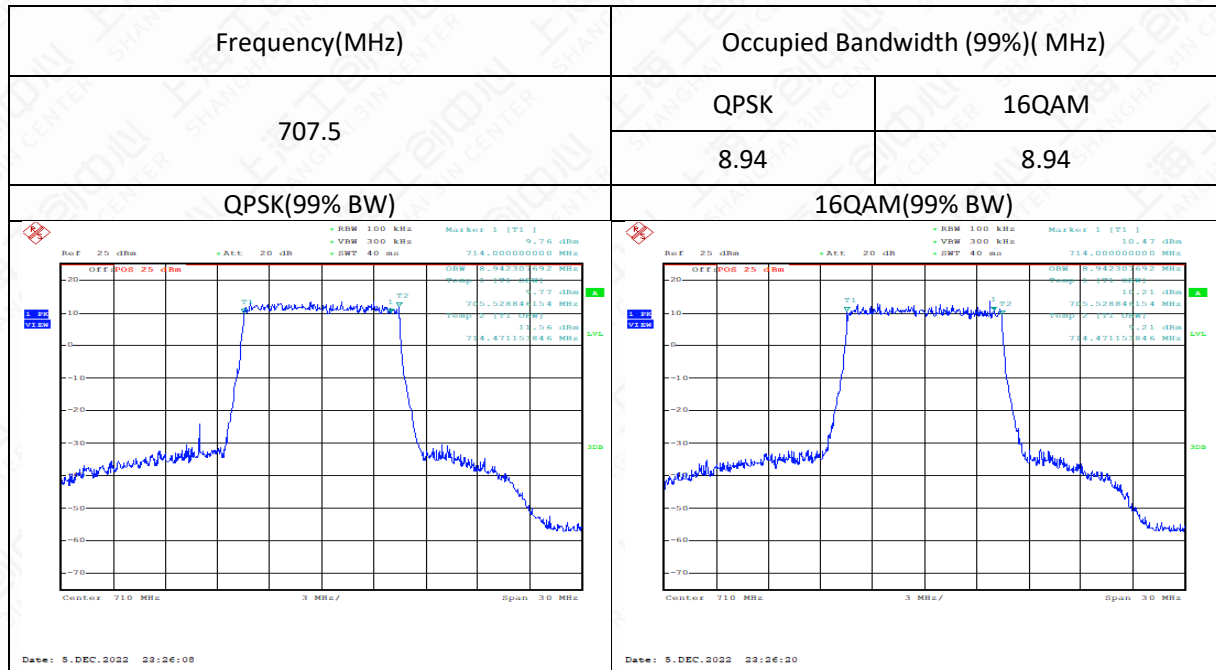


LTE band 7, 20MHz (99%)

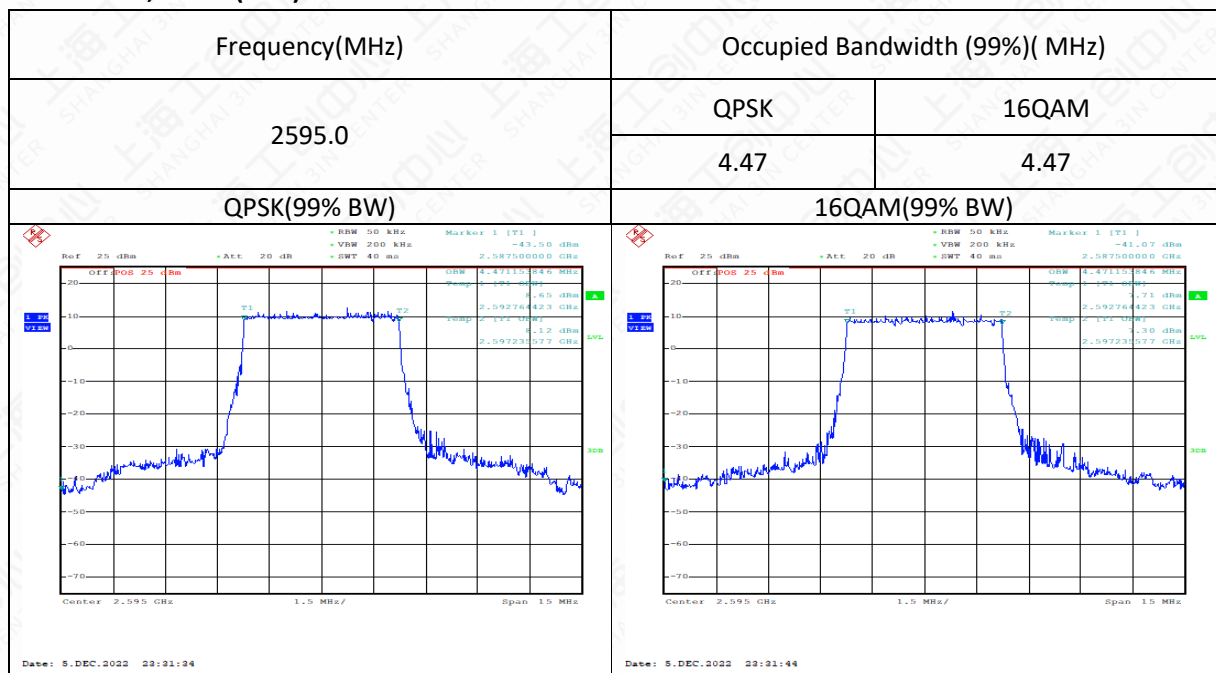
Frequency(MHz)		Occupied Bandwidth (99%)(MHz)	
2535	QPSK	16QAM	
	17.98	17.98	
QPSK(99% BW)		16QAM(99% BW)	
Ref: 25 dBm Att: 20 dB RBW: 200 kHz VSW: 1 MHz SWT: 40 ms Marker 1 [T1] Center 2.535 GHz Span 60 MHz Date: 5.DEC.2022 22:22:30		Ref: 25 dBm Att: 20 dB RBW: 200 kHz VSW: 1 MHz SWT: 40 ms Marker 1 [T1] Center 2.535 GHz Span 60 MHz Date: 5.DEC.2022 22:22:30	

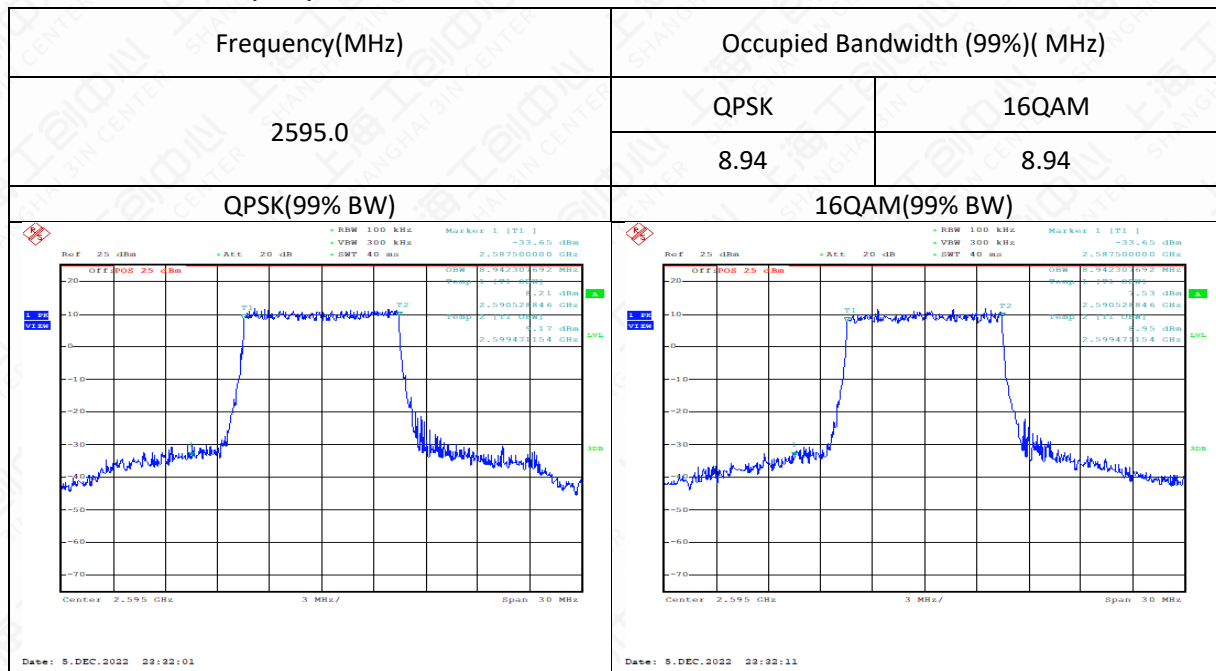
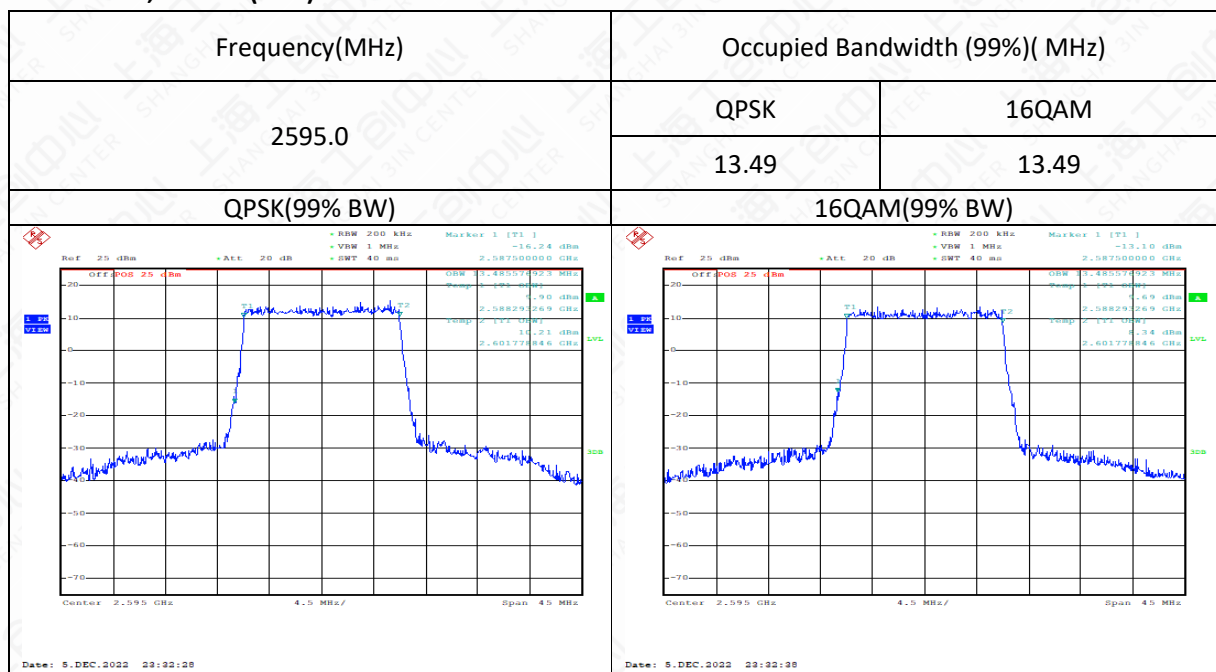
LTE band 17, 5MHz (99%)


LTE band 17, 10MHz (99%)

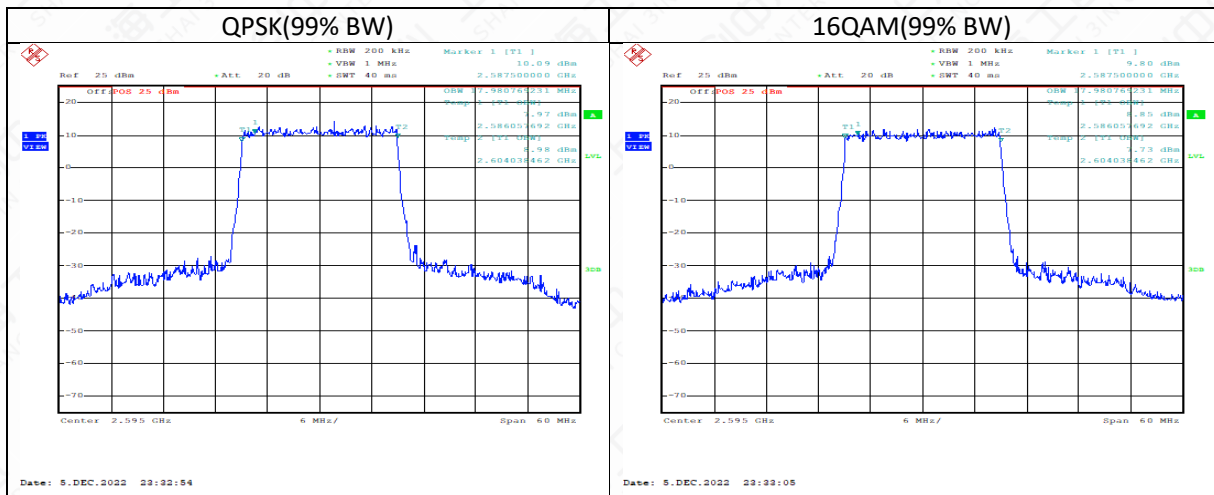


LTE band 38, 5MHz (99%)

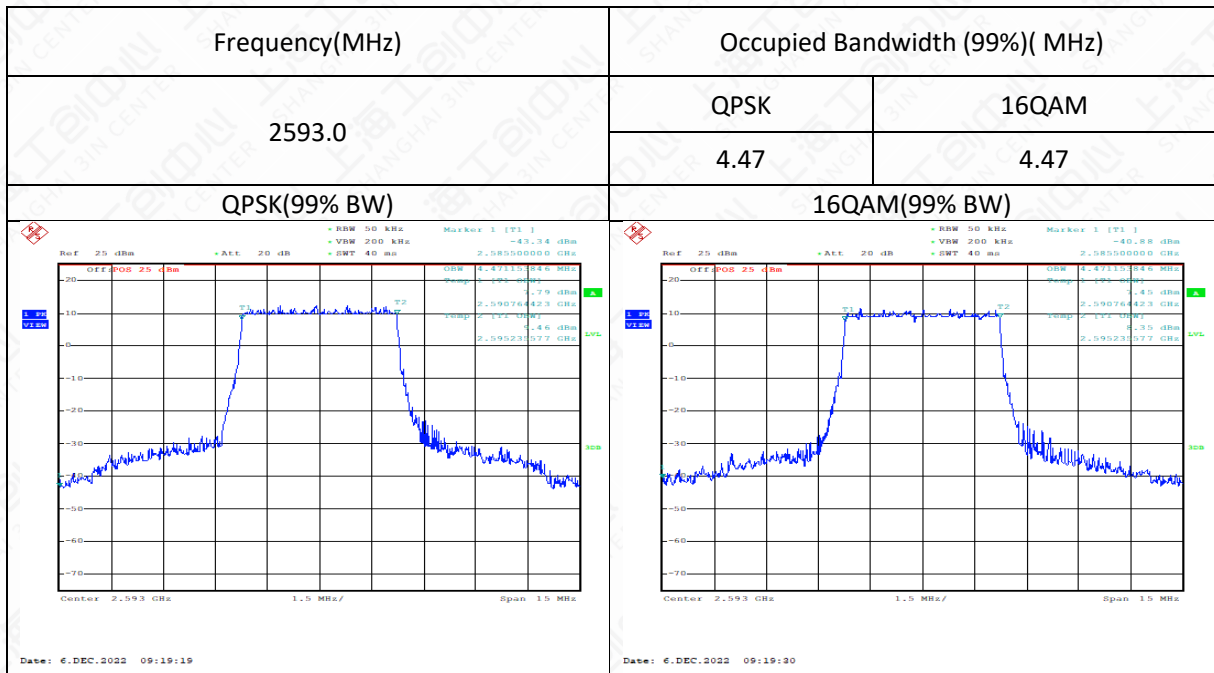


LTE band 38, 10MHz (99%)

LTE band 38, 15MHz (99%)

LTE band 38, 20MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%)(MHz)	
2595.0	QPSK	16QAM
	17.98	17.98

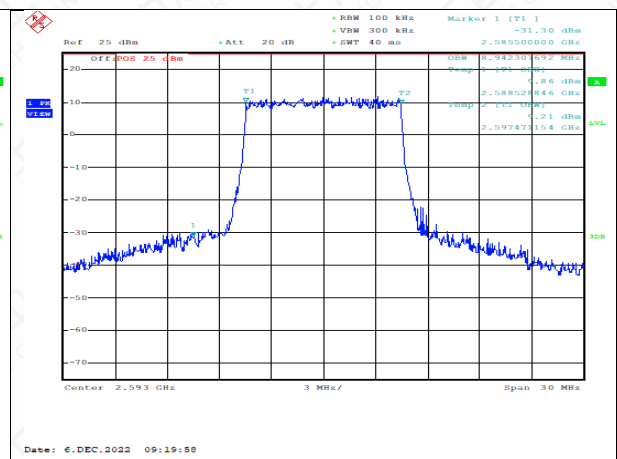
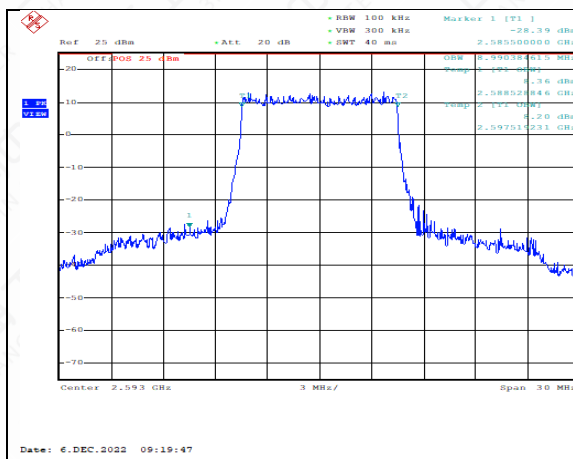


LTE band 41, 5MHz (99%)



LTE band 41, 10MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%)(MHz)	
2593.0	QPSK	16QAM
	8.99	8.94
QPSK(99% BW)	16QAM(99% BW)	

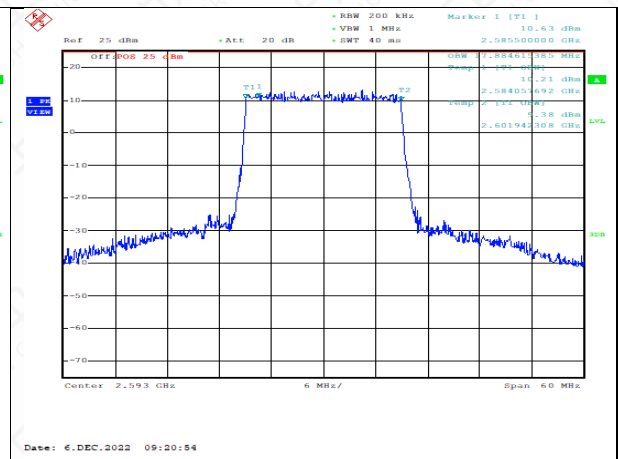
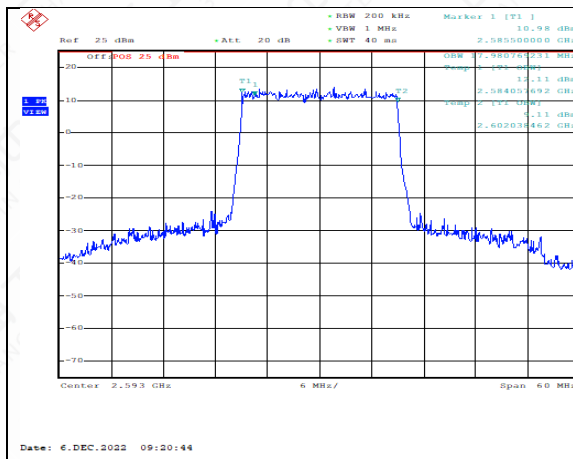


LTE band 41, 15MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%)(MHz)	
2593.0	QPSK	16QAM
	13.49	13.49
QPSK(99% BW)	16QAM(99% BW)	
Ref 25 dBm Off Pos 25 dBm RBW 200 kHz VBW 1 MHz SMT 40 dB Marker 1 [T1] -13.42 dBm 2.593000000 GHz -9.31 dBm 2.586291269 GHz -0.05 dBm 2.599778846 GHz	Ref 25 dBm Off Pos 25 dBm RBW 200 kHz VBW 1 MHz SMT 40 dB Marker 1 [T1] -14.54 dBm 2.583000000 GHz -10.17 dBm 2.586291269 GHz -6.69 dBm 2.599778846 GHz	
Date: 6.DEC.2022 09:20:16		
Date: 6.DEC.2022 09:20:27		

LTE band 41, 20MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%)(MHz)	
2593.0	QPSK	16QAM
	17.98	17.89
QPSK(99% BW)	16QAM(99% BW)	



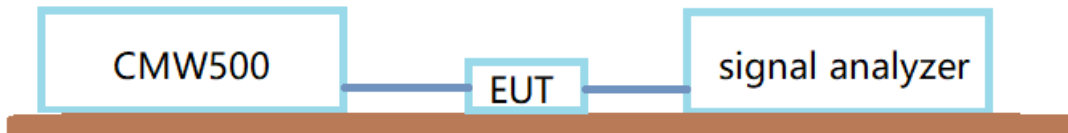
6.5 Emission Bandwidth

Reference

CFR Part 2.1049,22.917(b),24.238(a),27.53(g),27.53(h), 27.53(m),90.209(b)

No specific occupied bandwidth requirements in RSS-Gen: 6.7.

6.5.1 Test Setup



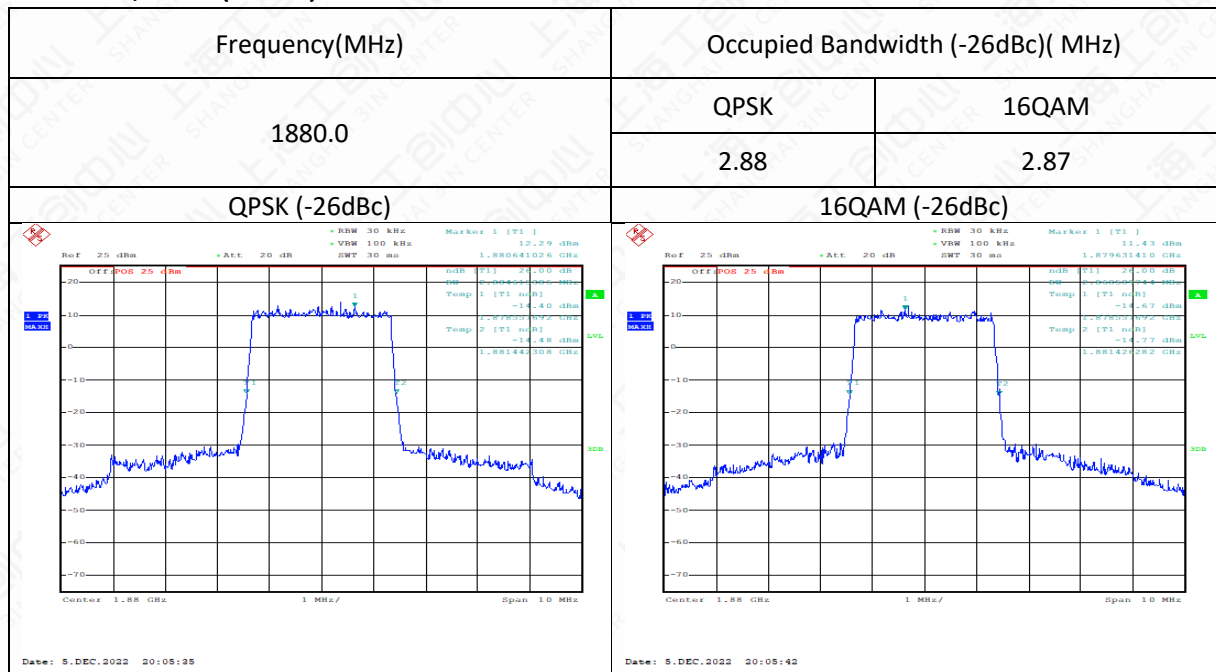
6.5.2 Emission Bandwidth Results

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. Table below lists the measured -26dBc BW. Spectrum analyzer plots are included on the following pages.

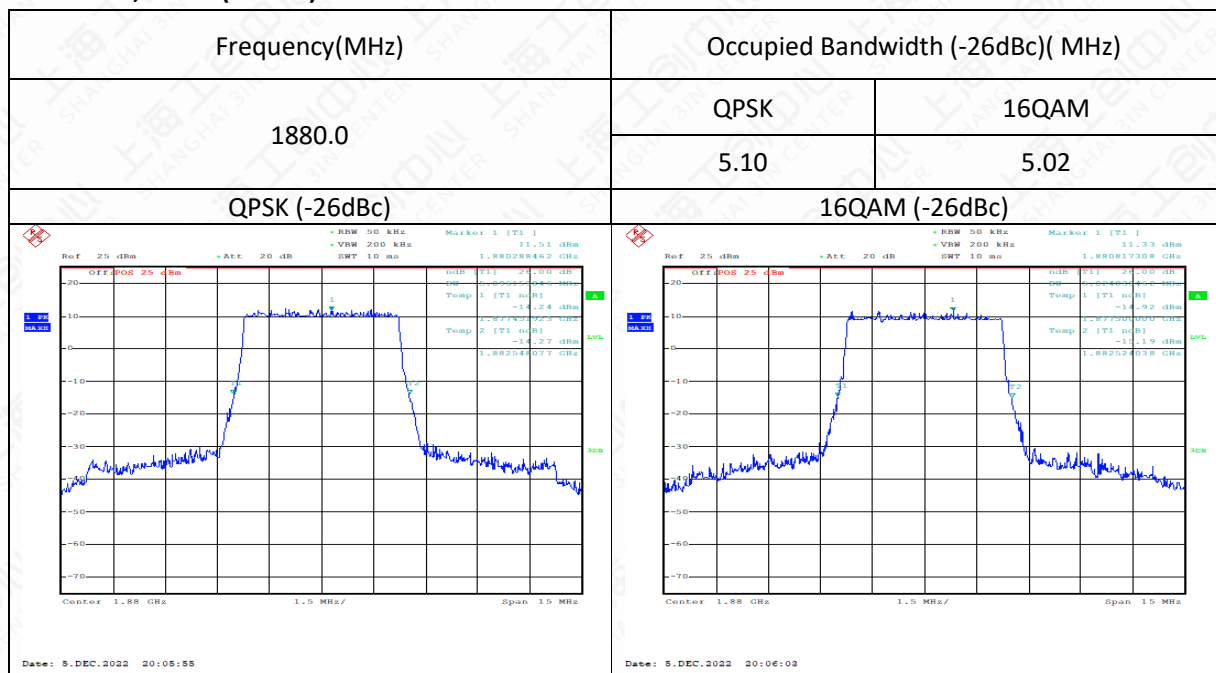
LTE band 2, 1.4MHz (-26dBc)

Frequency(MHz)	Occupied Bandwidth (-26dBc)(MHz)	
1880.0	QPSK	16QAM
	1.27	1.29
QPSK (-26dBc)		16QAM (-26dBc)
Date: 5.DEC.2022 20:05:13		Date: 5.DEC.2022 20:05:21

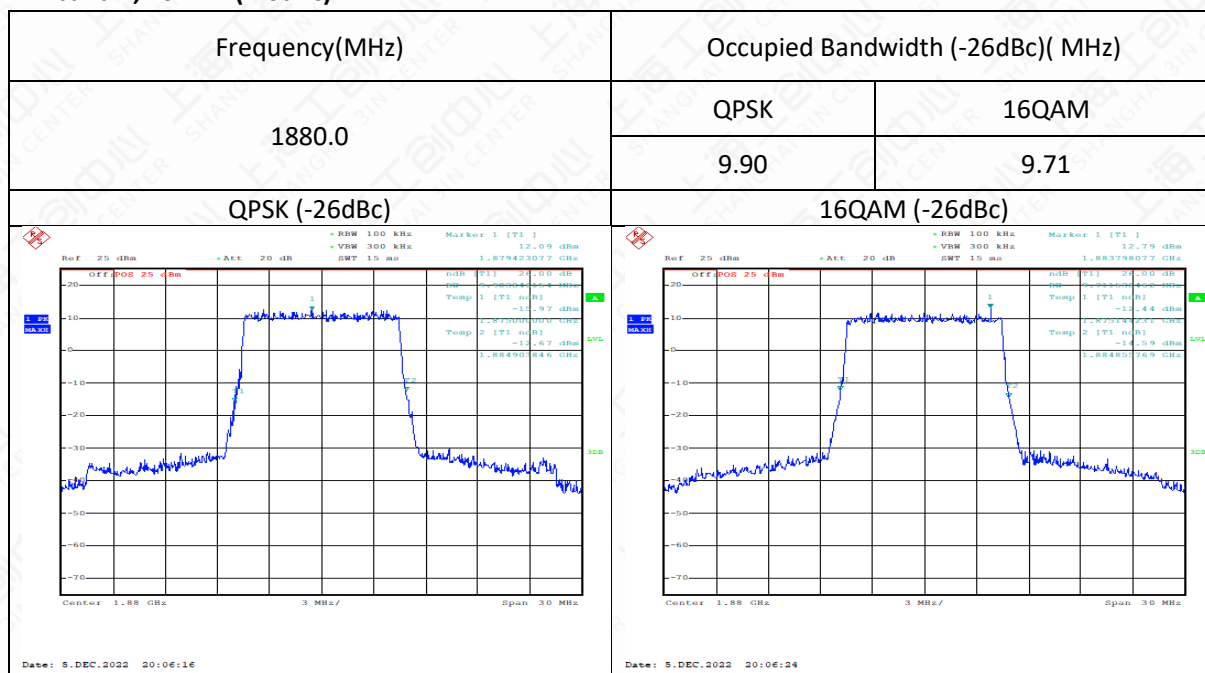
LTE band 2, 3MHz (-26dBc)



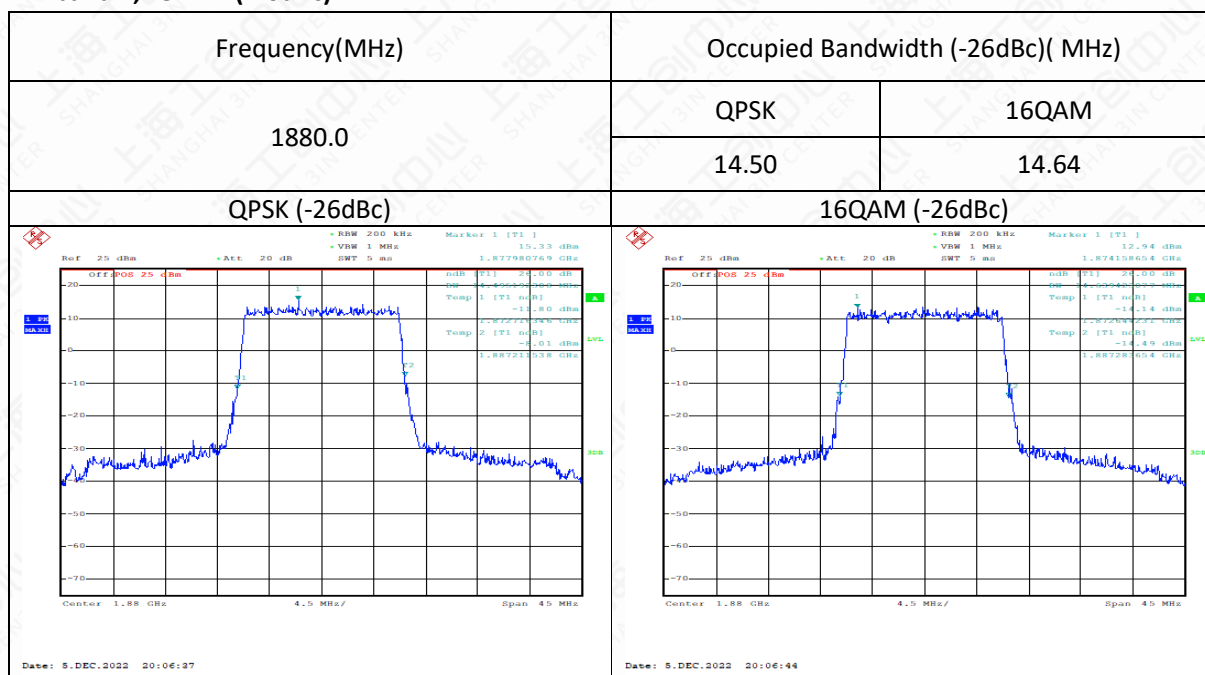
LTE band 2, 5MHz (-26dBc)



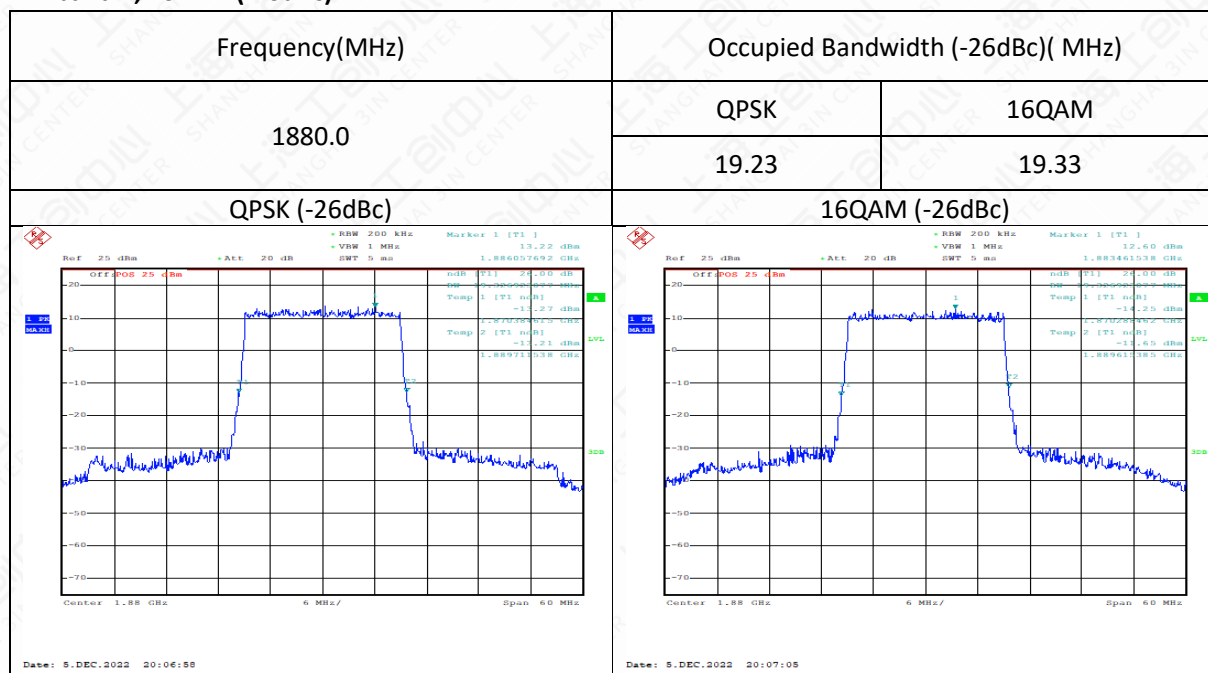
LTE band 2, 10MHz (-26dBc)



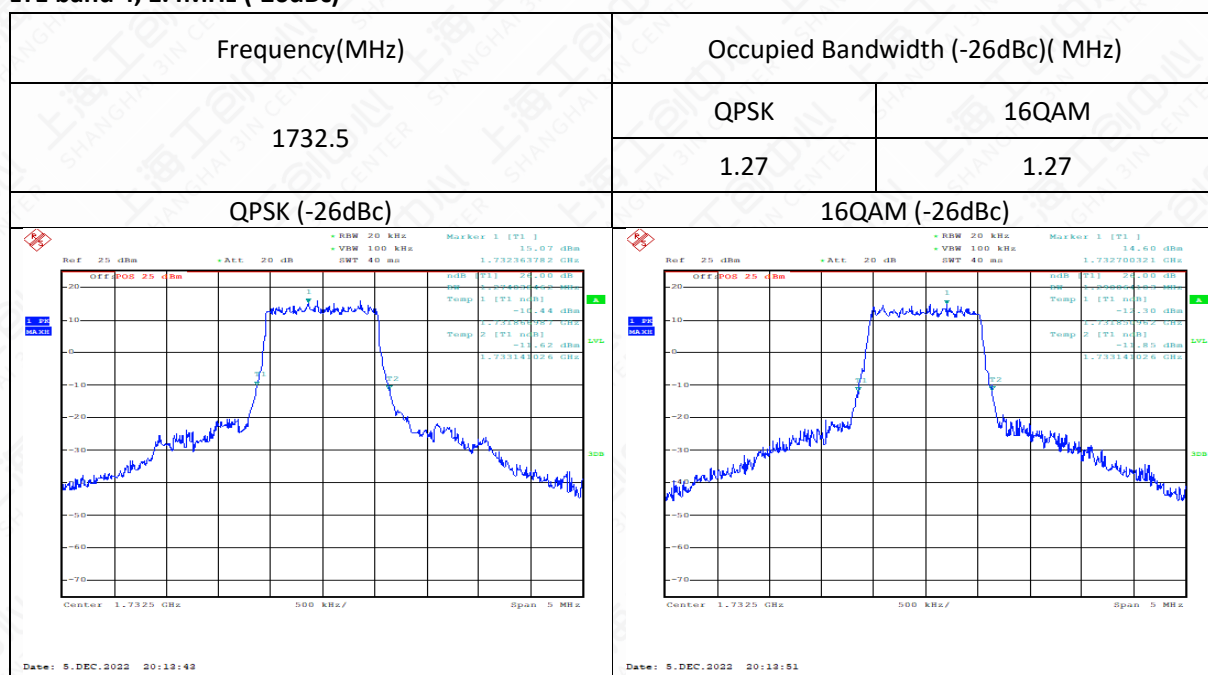
LTE band 2, 15MHz (-26dBc)



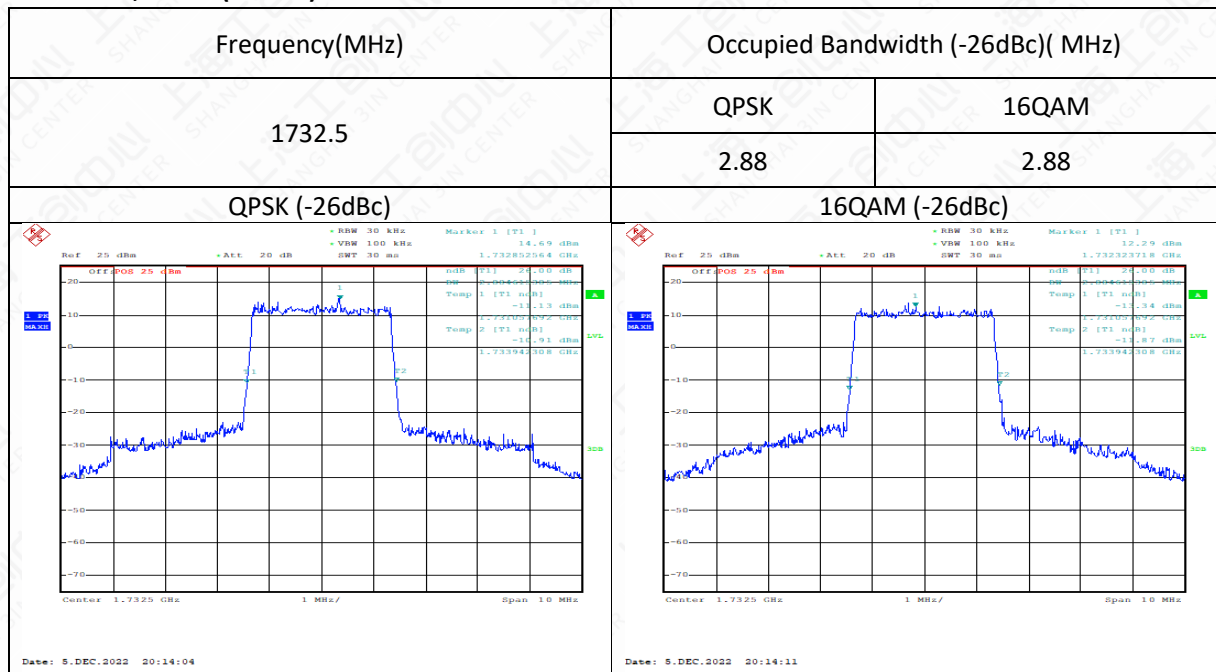
LTE band 2, 20MHz (-26dBc)



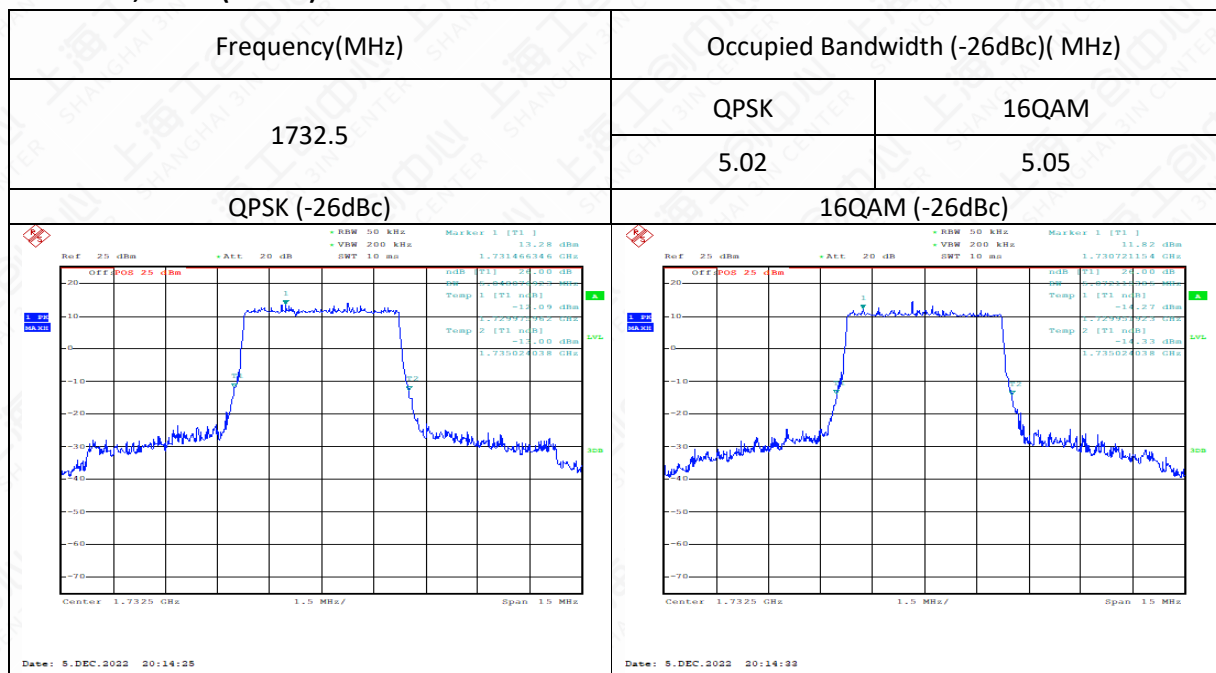
LTE band 4, 1.4MHz (-26dBc)



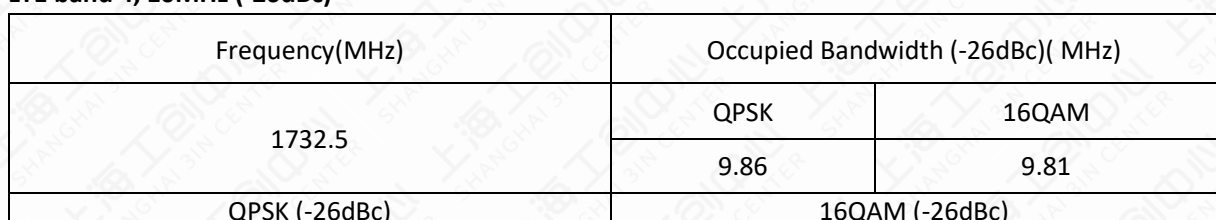
LTE band 4, 3MHz (-26dBc)

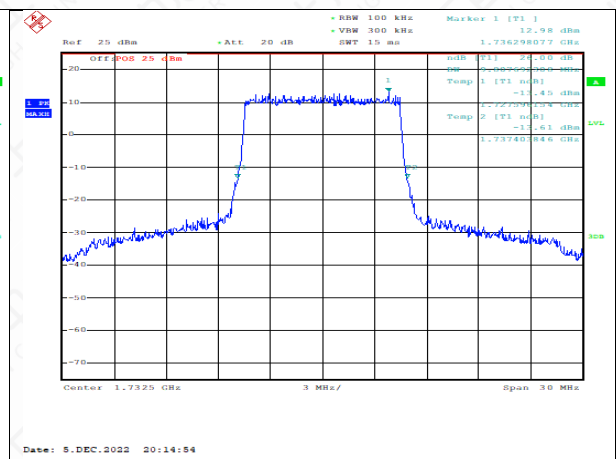
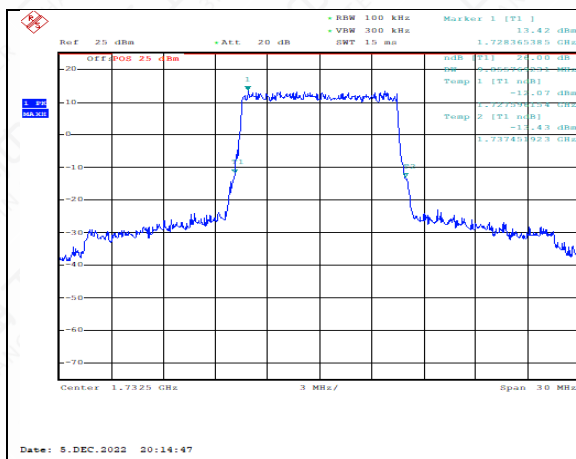


LTE band 4, 5MHz (-26dBc)



LTE band 4, 10MHz (-26dBc)





LTE band 4, 15MHz (-26dBc)

Frequency(MHz)		Occupied Bandwidth (-26dBc)(MHz)	
1732.5	QPSK	16QAM	
	14.64	14.64	
QPSK (-26dBc)		16QAM (-26dBc)	

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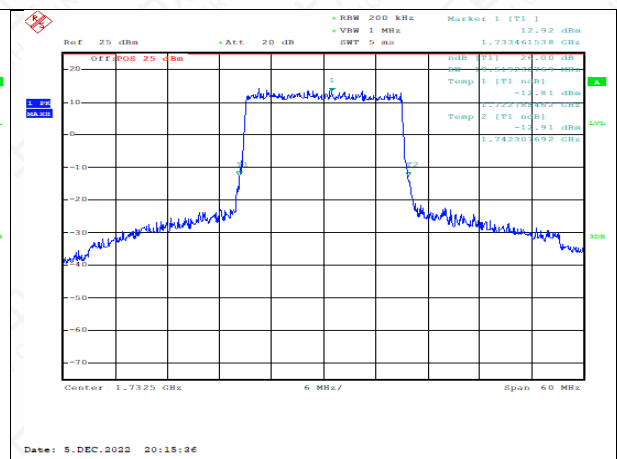
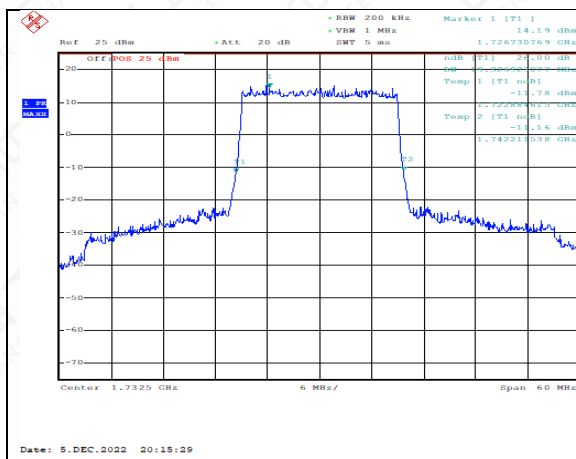
1732.5

MHz

<

LTE band 4, 20MHz (-26dBc)

Frequency(MHz)	Occupied Bandwidth (-26dBc)(MHz)	
1732.5	QPSK	16QAM
	19.23	19.52
QPSK (-26dBc)	16QAM (-26dBc)	

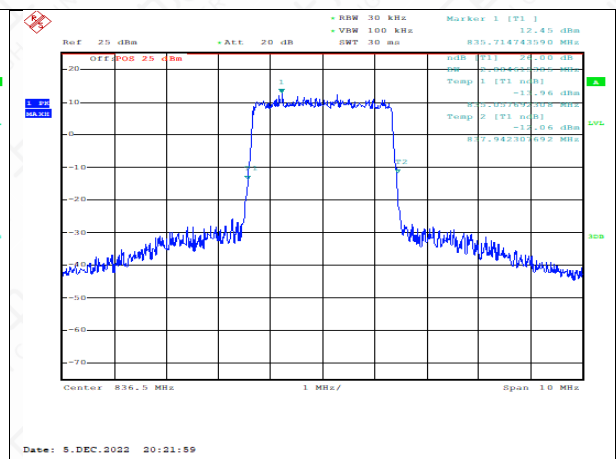
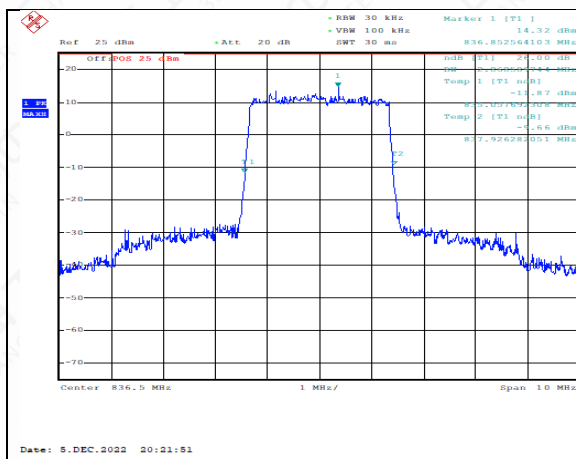


LTE band 5, 1.4MHz (-26dBc)

Frequency(MHz)		Occupied Bandwidth (-26dBc)(MHz)	
836.5	QPSK	16QAM	
	1.29	1.27	
QPSK (-26dBc)		16QAM (-26dBc)	
Center 836.5 MHz Span 5 MHz Date: 5.DEC.2022 20:21:21		Center 836.5 MHz Span 5 MHz Date: 5.DEC.2022 20:21:28	

LTE band 5, 3MHz (-26dBc)

Frequency(MHz)	Occupied Bandwidth (-26dBc)(MHz)	
836.5	QPSK	16QAM
	2.87	2.88
QPSK (-26dBc)	16QAM (-26dBc)	

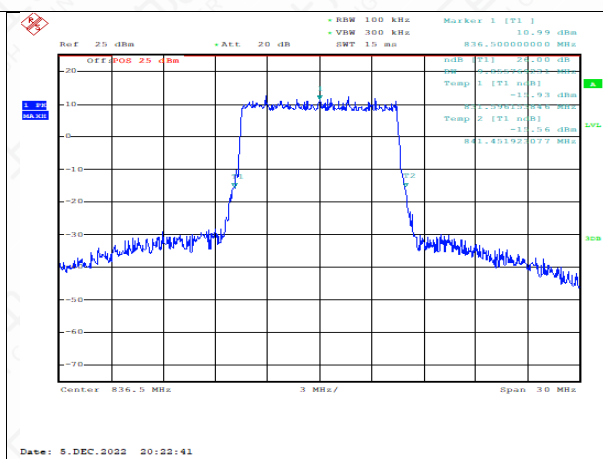
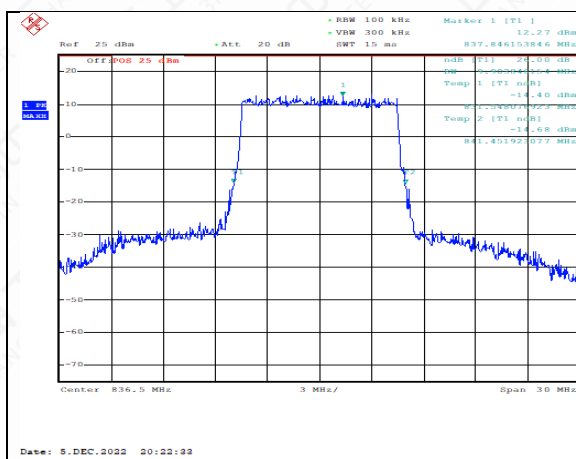


LTE band 5, 5MHz (-26dBc)

Frequency(MHz)		Occupied Bandwidth (-26dBc)(MHz)	
836.5	QPSK	16QAM	
	5.00	4.98	
QPSK (-26dBc)		16QAM (-26dBc)	

LTE band 5, 10MHz (-26dBc)

Frequency(MHz)	Occupied Bandwidth (-26dBc)(MHz)	
836.5	QPSK	16QAM
	9.86	9.86
QPSK (-26dBc)	16QAM (-26dBc)	



LTE band 7, 5MHz (-26dBc)

Frequency(MHz)	Occupied Bandwidth (-26dBc)(MHz)	
2535	QPSK	16QAM
	5.10	5.05
QPSK (-26dBc)	16QAM (-26dBc)	

QPSK (-26dBc) Spectrum Plot (2535 MHz)

Center: 2.535 GHz, Span: 1.5 MHz

Marker 1 [T1] 2.535 GHz, -10.00 dBm

Temp 1 [T1] 0.00 dBm, -10.00 dBm

Temp 2 [T1] 0.00 dBm, -10.00 dBm

16QAM (-26dBc) Spectrum Plot (2535 MHz)

Center: 2.535 GHz, Span: 1.5 MHz

Marker 1 [T1] 2.535 GHz, -10.00 dBm

Temp 1 [T1] 0.00 dBm, -10.00 dBm

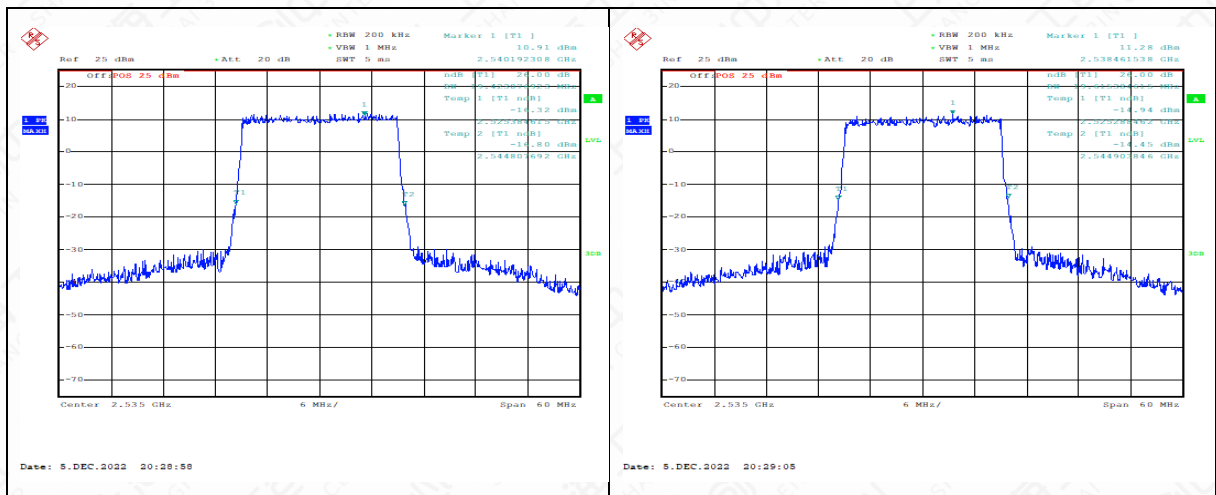
Temp 2 [T1] 0.00 dBm, -10.00 dBm

Date: 5.DEC.2022 20:27:56

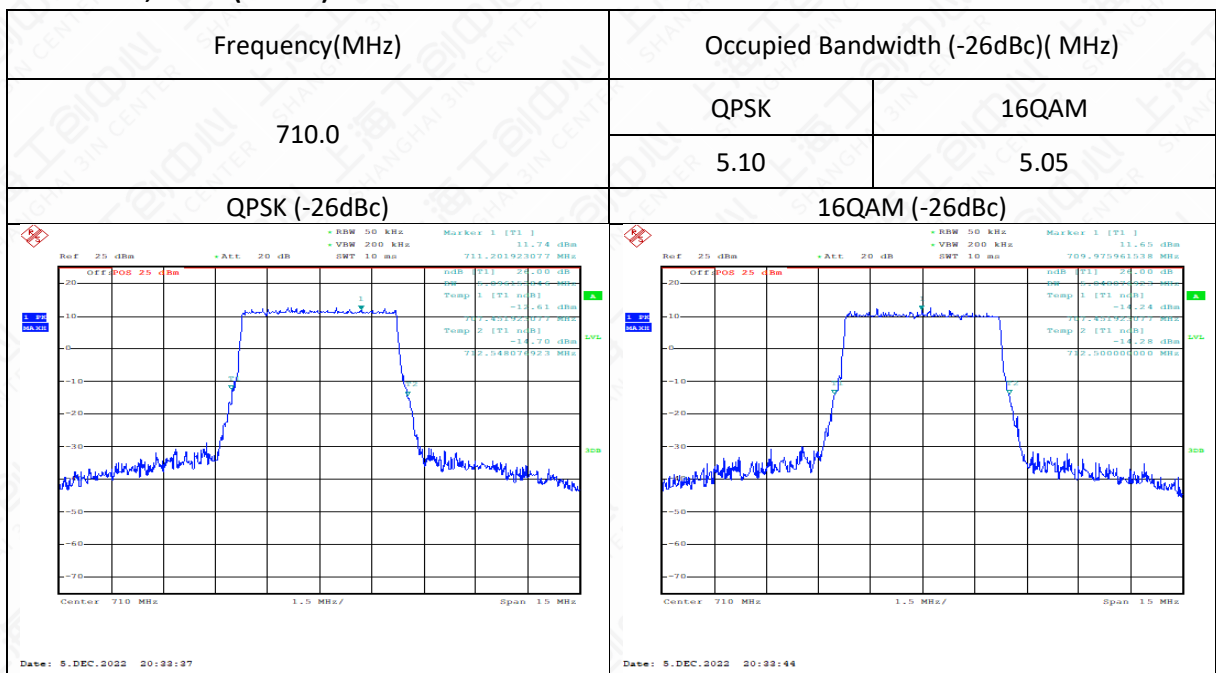
Date: 5.DEC.2022 20:28:03

LTE band 7, 10MHz (-26dBc)mid

Frequency(MHz)	Occupied Bandwidth (-26dBc)(MHz)	
2535	QPSK	16QAM
	9.86	9.81
QPSK (-26dBc)	16QAM (-26dBc)	

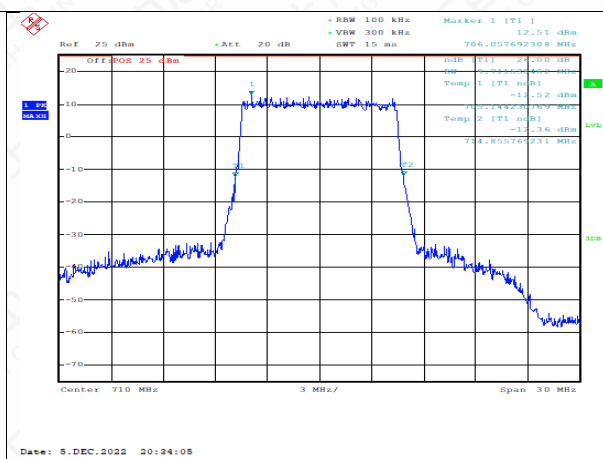
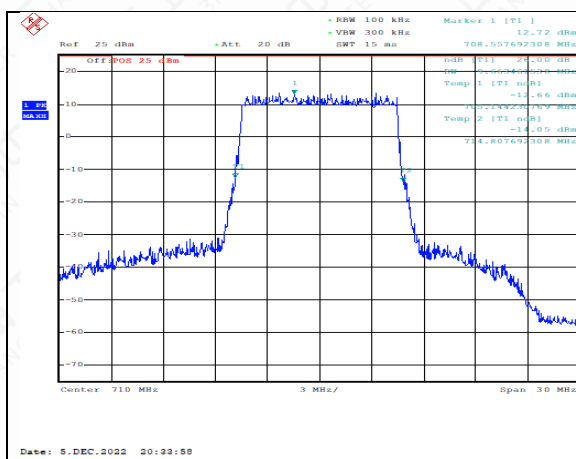


LTE band 17, 5MHz (-26dBc)



LTE band 17, 10MHz (-26dBc)

Frequency(MHz)	Occupied Bandwidth (-26dBc)(MHz)	
710.0	QPSK	16QAM
	9.66	9.71
QPSK (-26dBc)	16QAM (-26dBc)	

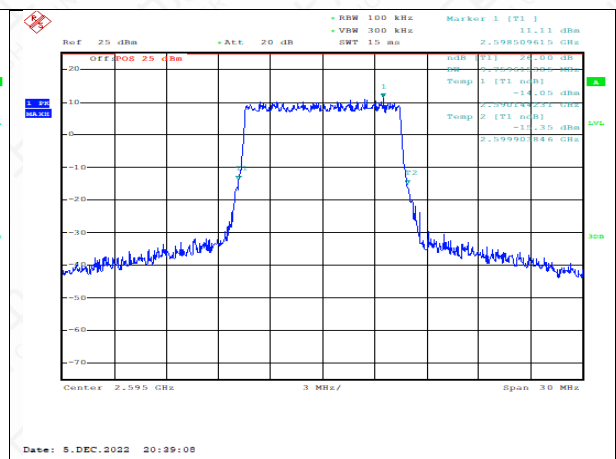
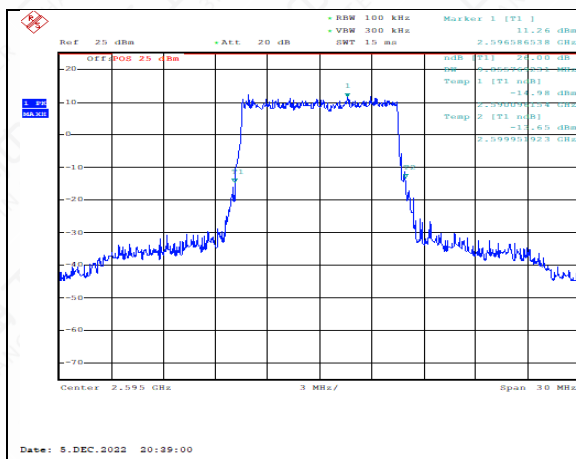


LTE band 38, 5MHz (-26dBc)

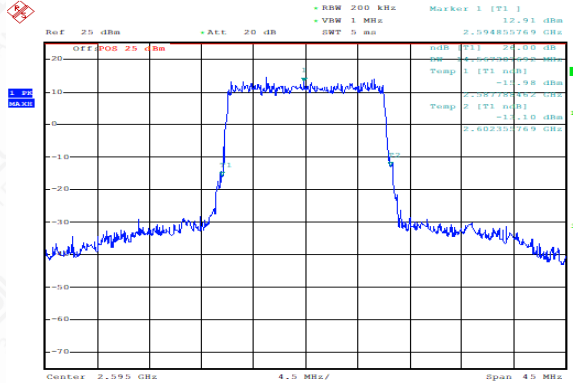
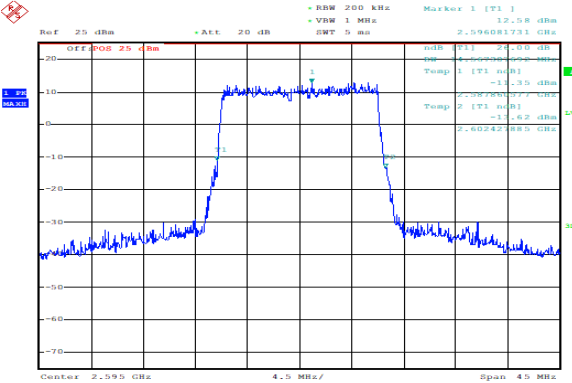
Frequency(MHz)		Occupied Bandwidth (-26dBc)(MHz)	
2595.0		QPSK	16QAM
		5.00	4.95
QPSK (-26dBc)		16QAM (-26dBc)	
Date: 5,DEC,2022 20:38:40		Date: 5,DEC,2022 20:38:47	

LTE band 38, 10MHz (-26dBc)

Frequency(MHz)	Occupied Bandwidth (-26dBc)(MHz)	
2595.0	QPSK	16QAM
	9.86	9.76
QPSK (-26dBc)	16QAM (-26dBc)	

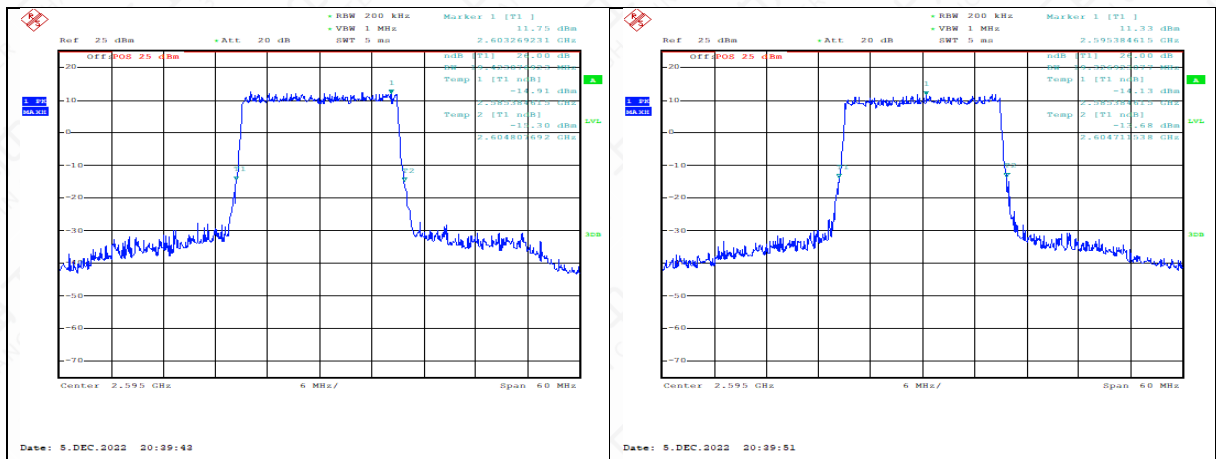


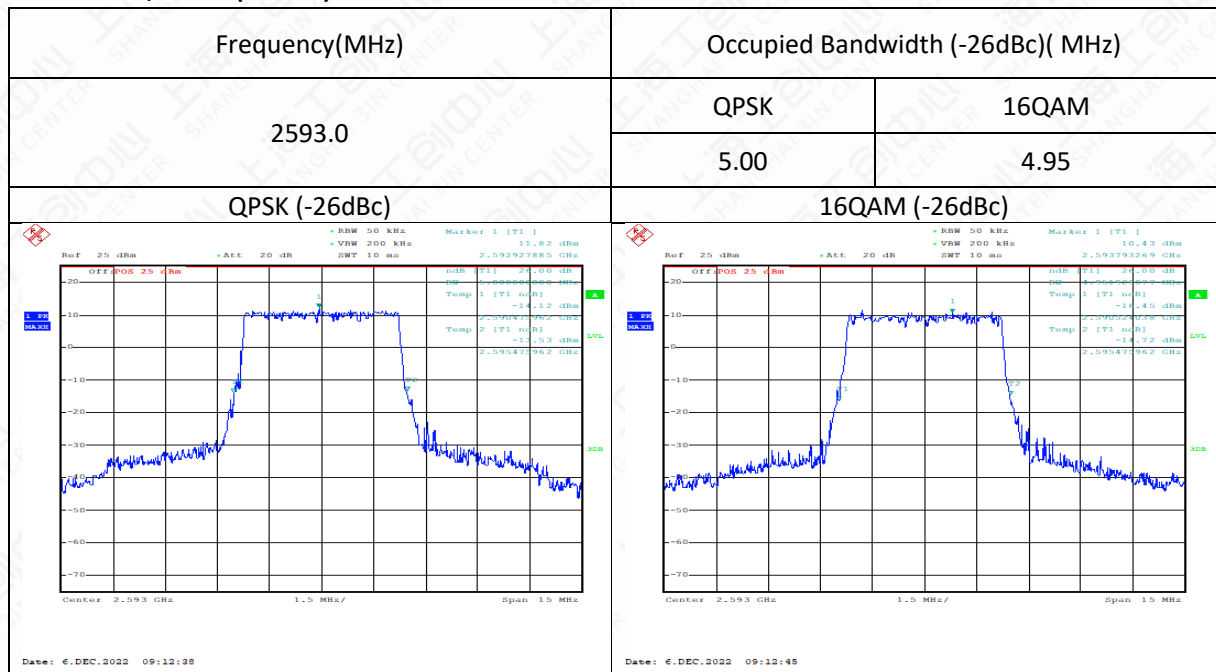
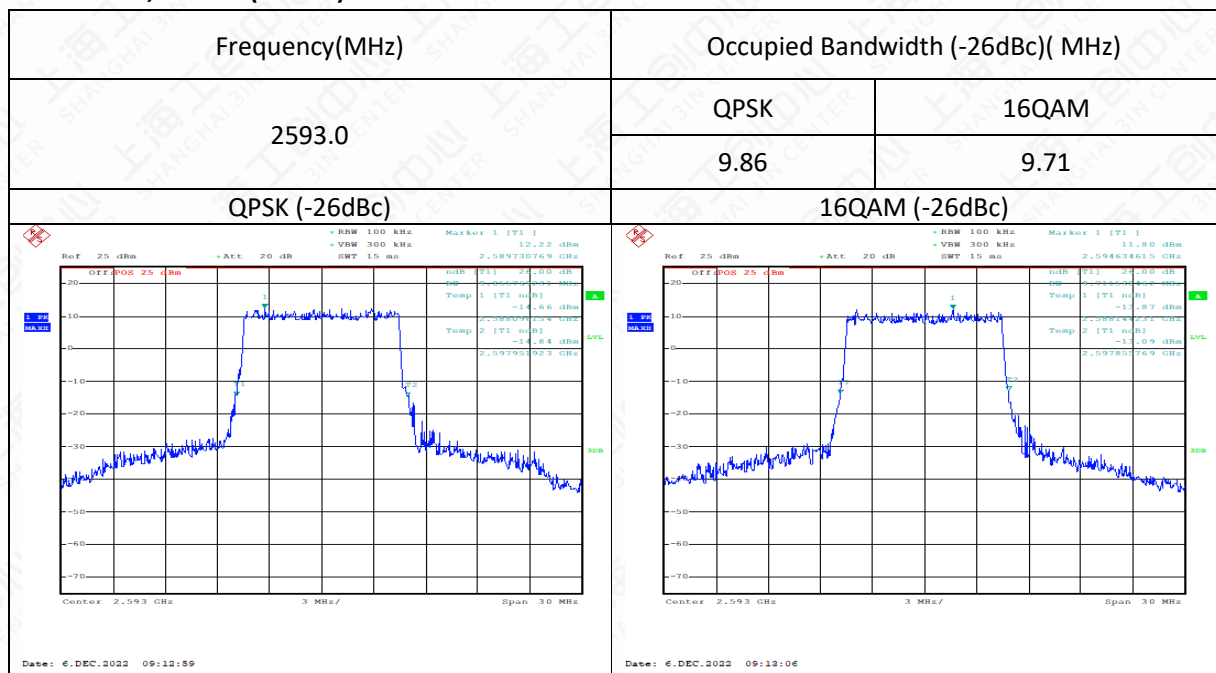
LTE band 38, 15MHz (-26dBc)

Frequency(MHz)		Occupied Bandwidth (-26dBc)(MHz)	
2595.0	QPSK	16QAM	
	14.42	14.57	
QPSK (-26dBc)		16QAM (-26dBc)	
			
Date: 5.DEC.2022 20:29:22		Date: 5.DEC.2022 20:29:29	

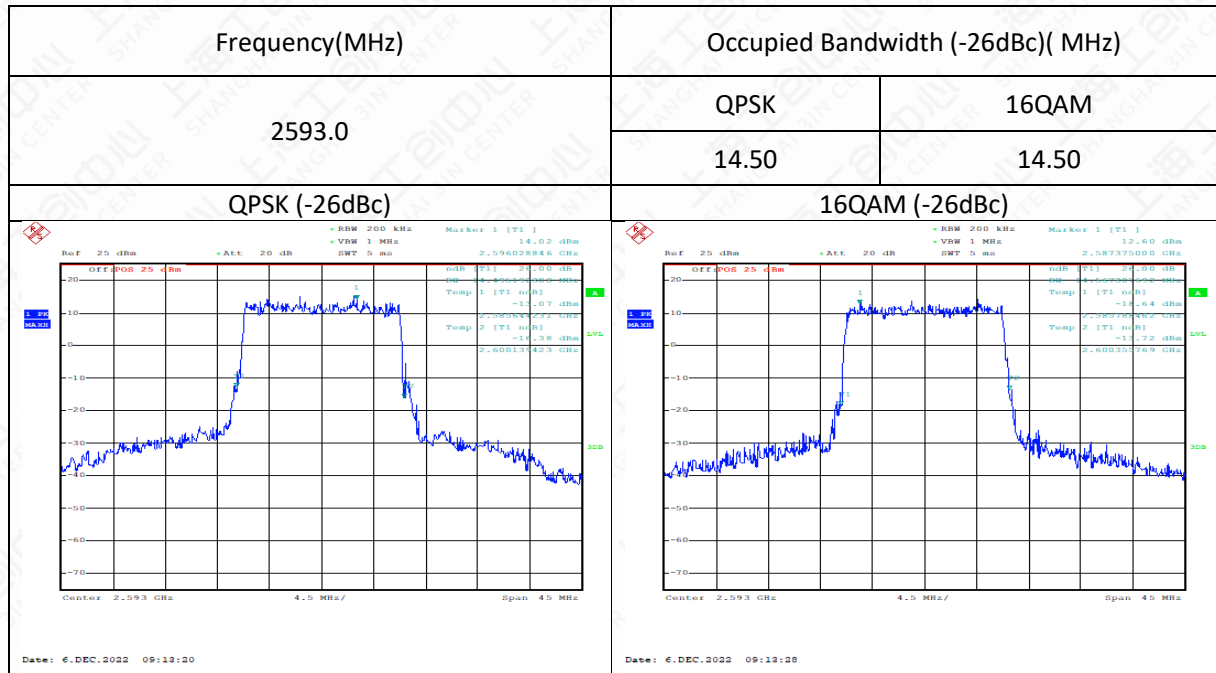
LTE band 38, 20MHz (-26dBc)

Frequency(MHz)	Occupied Bandwidth (-26dBc)(MHz)	
2595.0	QPSK	16QAM
	19.42	19.33
QPSK (-26dBc)	16QAM (-26dBc)	

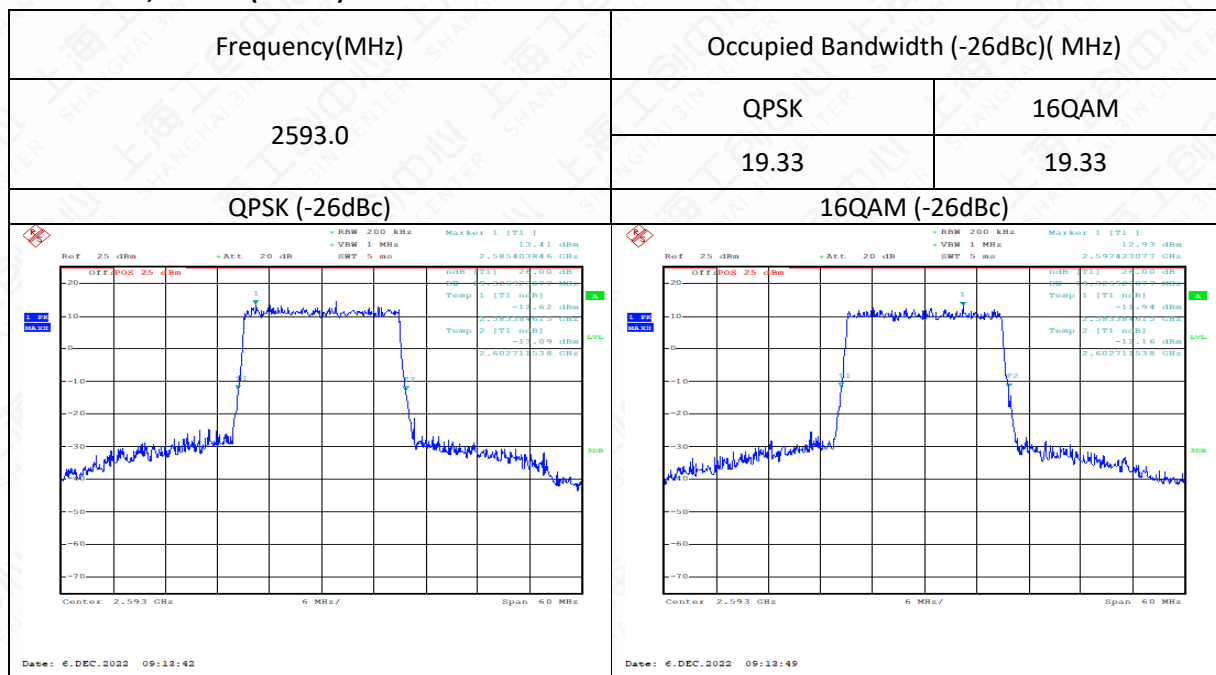


LTE band 41, 5MHz (-26dBc)

LTE band 41, 10MHz (-26dBc)


LTE band 41, 15MHz (-26dBc)



LTE band 41, 20MHz (-26dBc)



6.6 Band Edge Compliance

Reference

CFR Part 2.1049, 22.917(b), 24.238(a), 27.53(g), 27.53(h), 27.53(m), 90.669

Rule RSS-130 4.7, Rule RSS-132 5.5, Rule RSS-133 6.5, Rule RSS-139 6.6, Rule RSS-199 4.5

6.6.1 Measurement limit

Part 27.53(g), 27.53(h), 27.53(m) state that on any frequency outside frequency band of the US Cellular/PCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least $43 + 10 \log(P)$ dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

According to KDB 971168 6, a relaxation of the reference bandwidth is often provided for measurements within a specified frequency range at the edge of the authorized frequency block/band. This is often implemented by permitting the use of a narrower RBW (typically limited to a minimum RBW of 1% of the OBW) for measuring the out-of-band emissions without a requirement to integrate the result over the full reference bandwidth.

Part 27.53(m) states that 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.

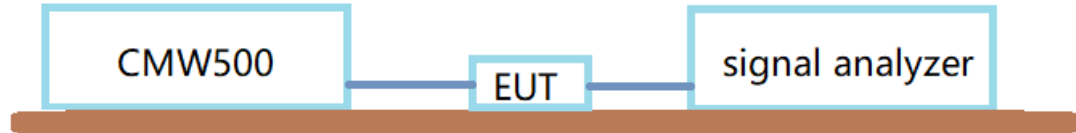
Rule RSS-132: 5.5: (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts). (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required. Limit -13 dBm

Rule RSS-133 6.5 specifies that " In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts).

After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required." Limit -13 dBm

Rule RSS-139 6.6 specifies that " In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least $43 + 10 \log_{10} p$ (watts) dB. (ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least $43 + 10 \log_{10} p$ (watts) dB."

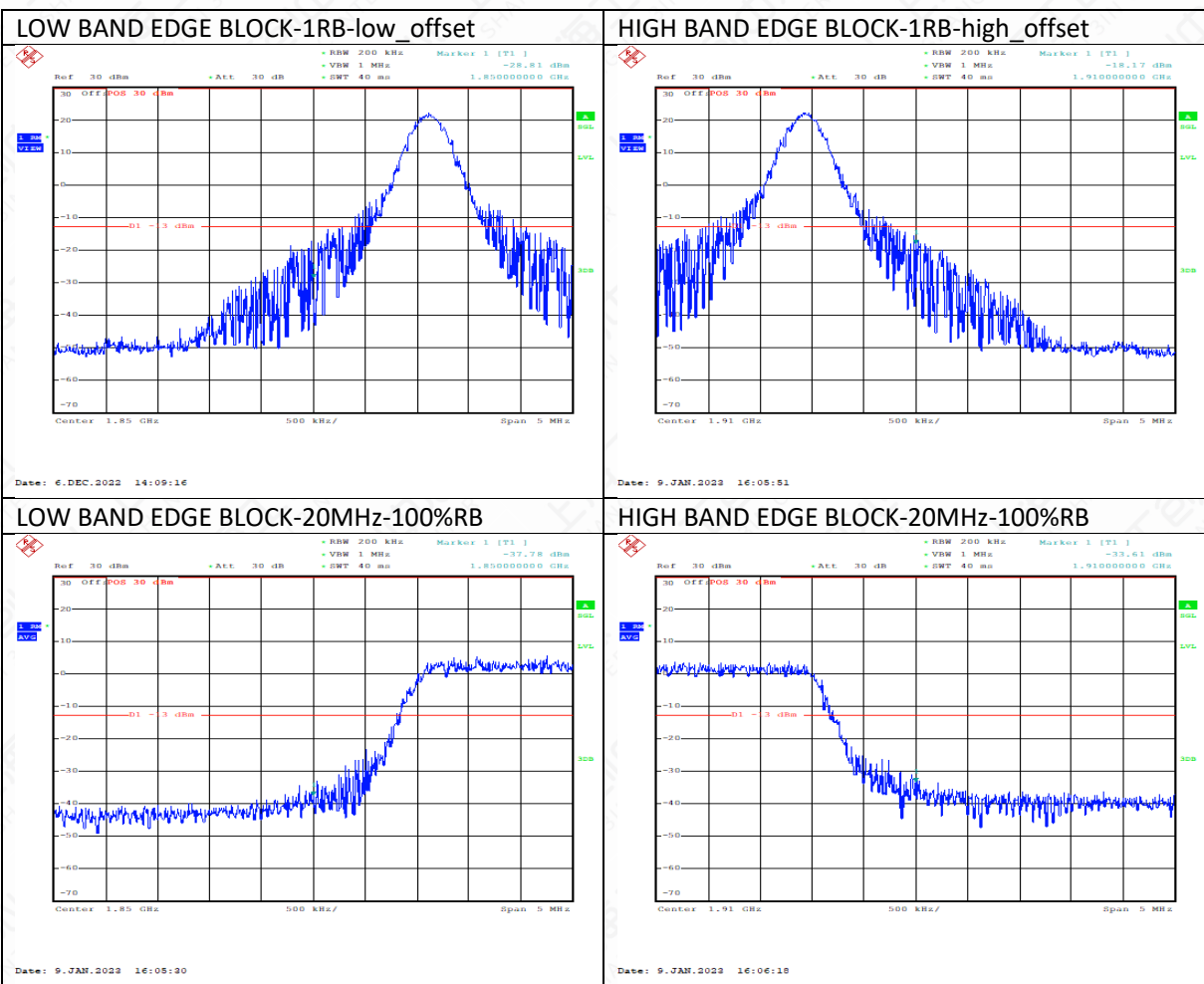
6.6.2 Test Setup



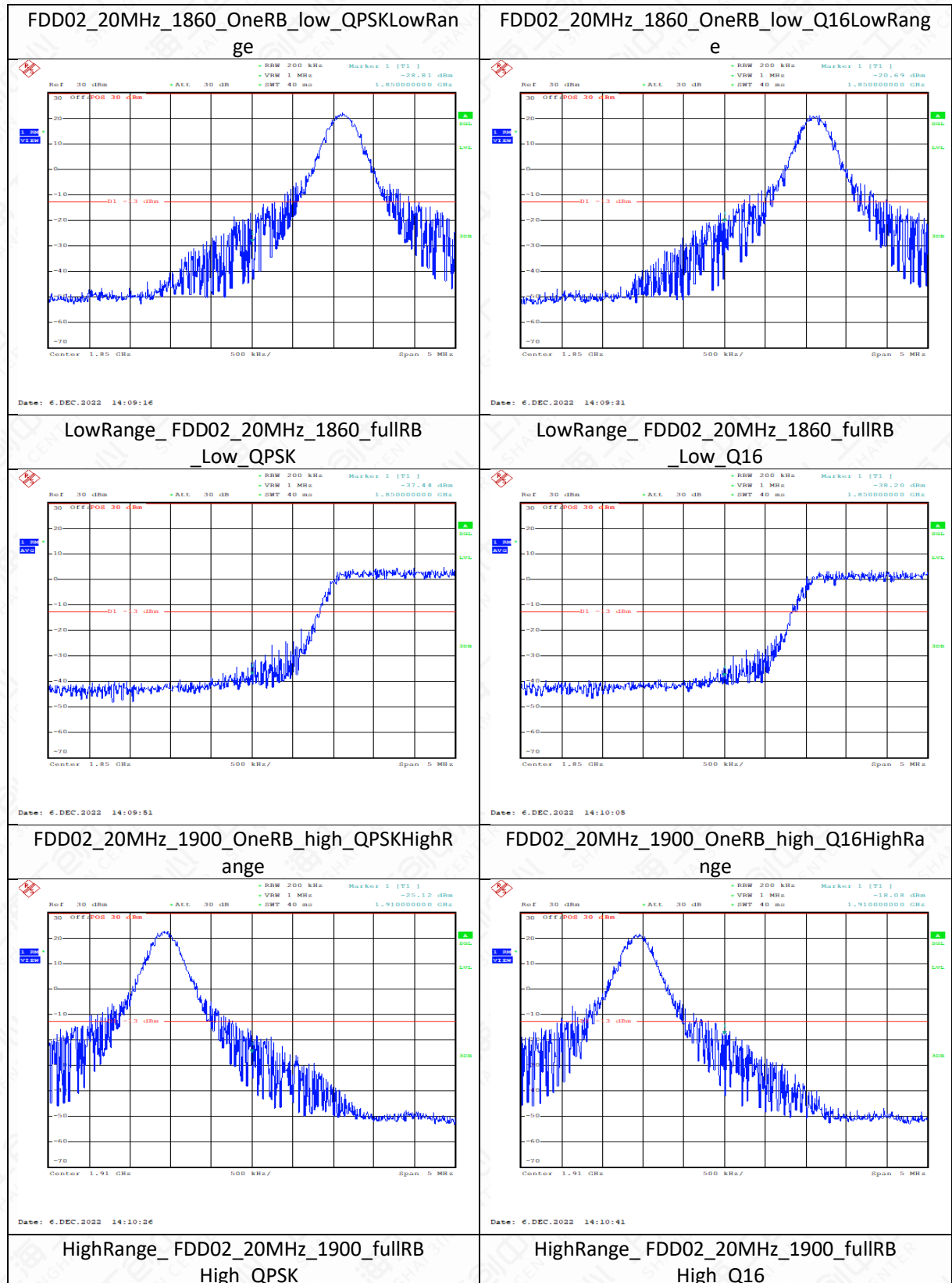
6.6.3 Measurement result

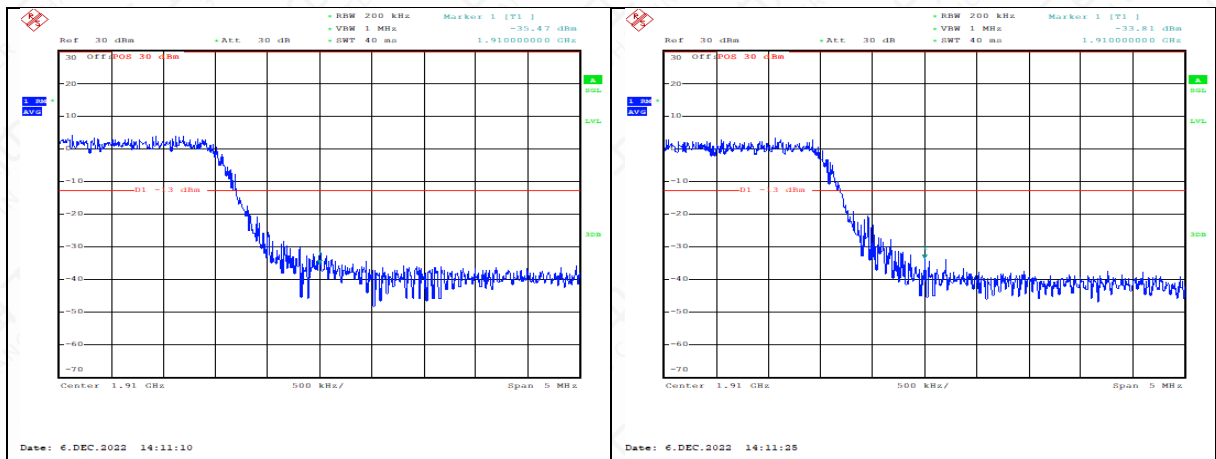
Only worst result is given below

LTE band 2

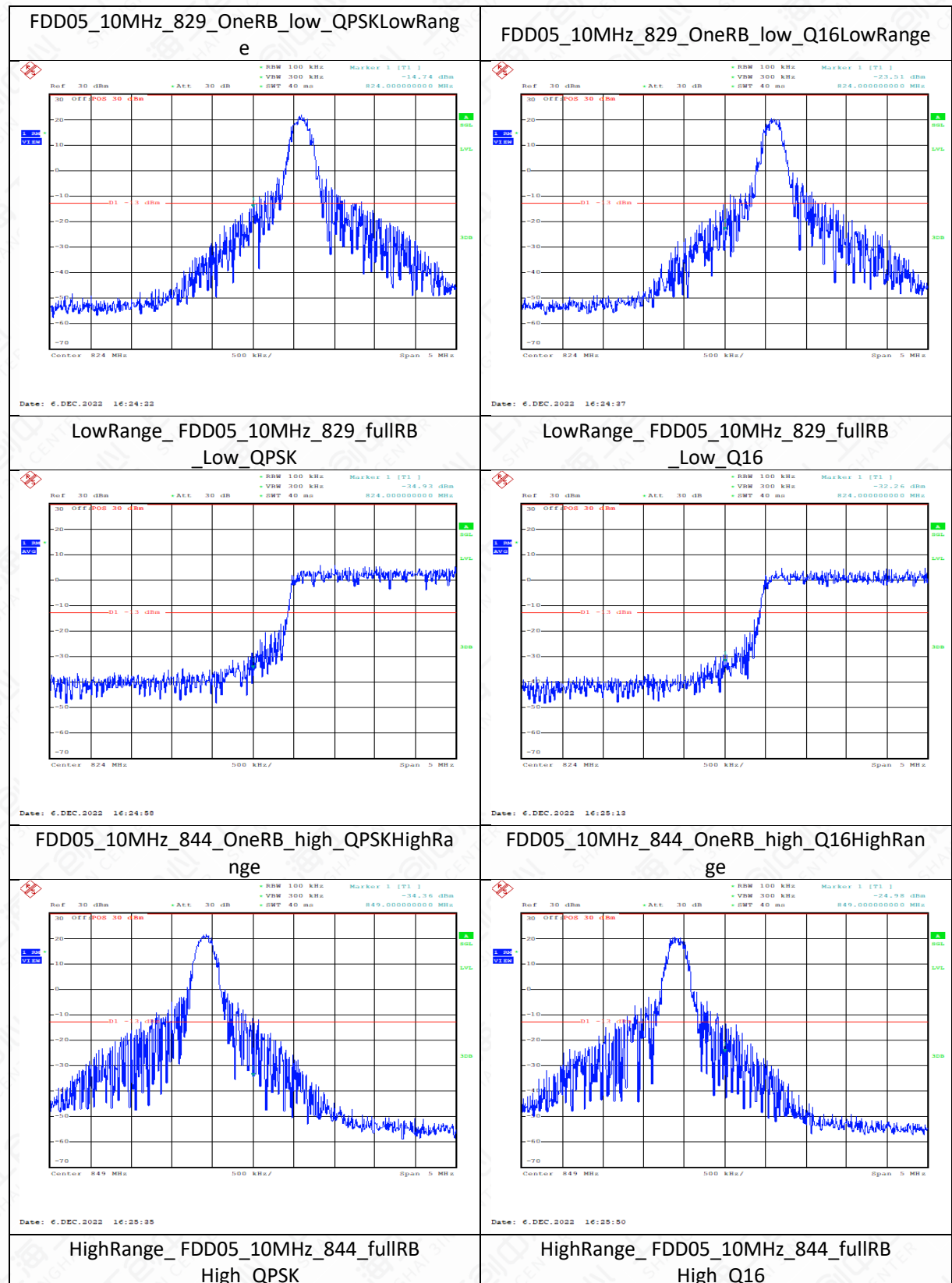


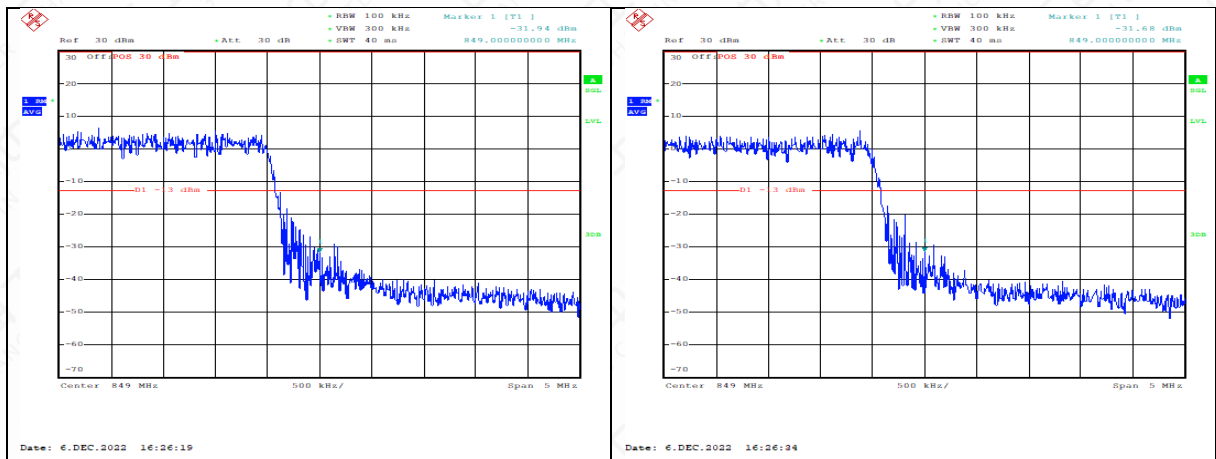
LTE band 4



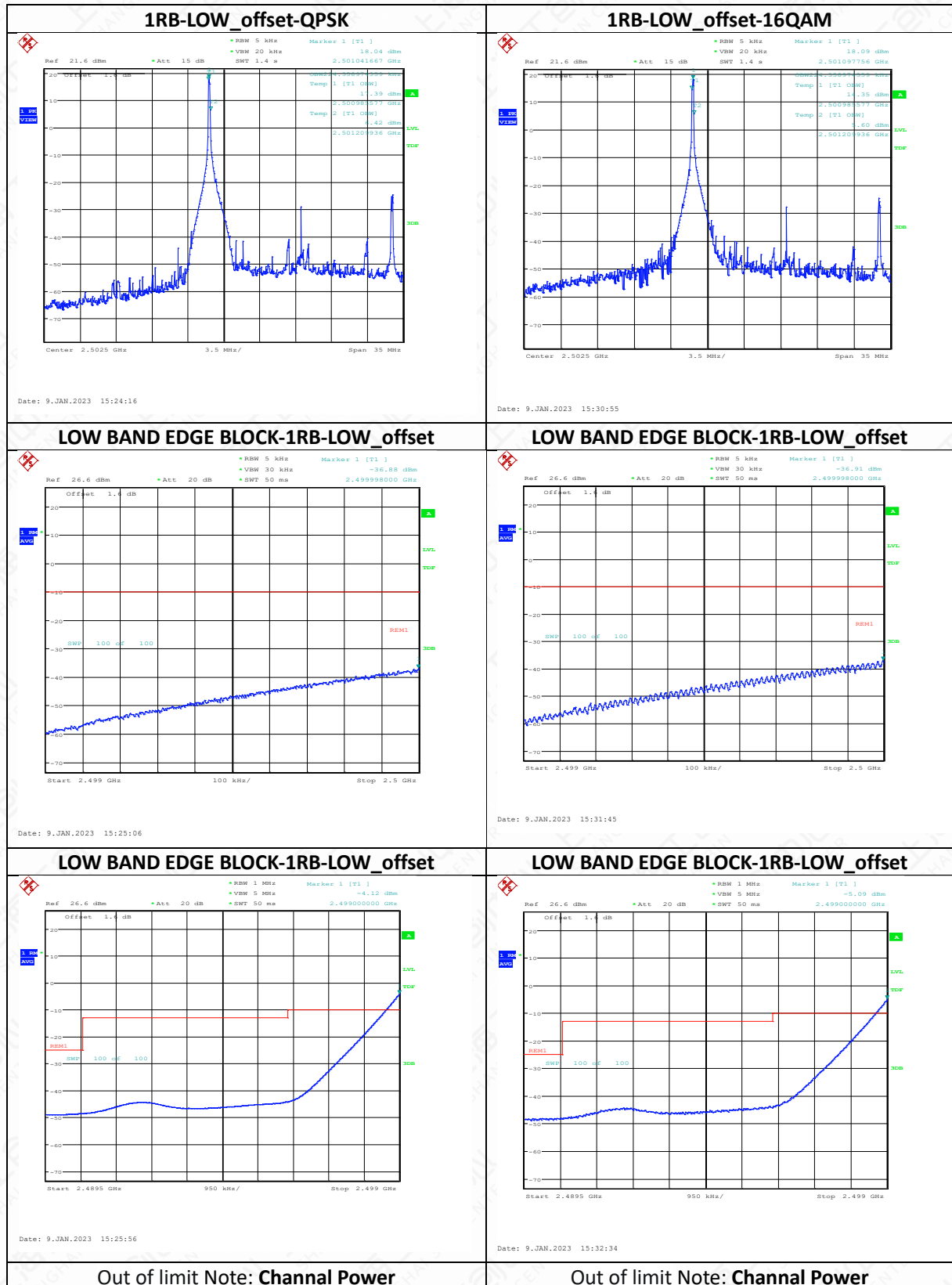


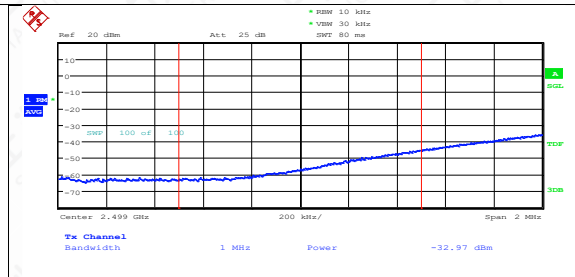
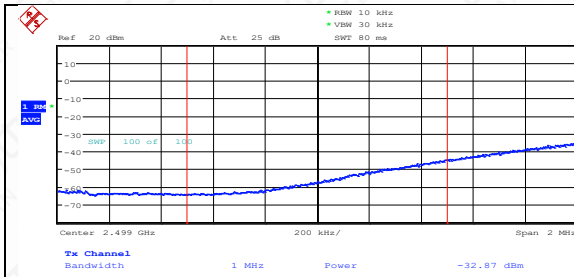
LTE band 5





LTE band 7

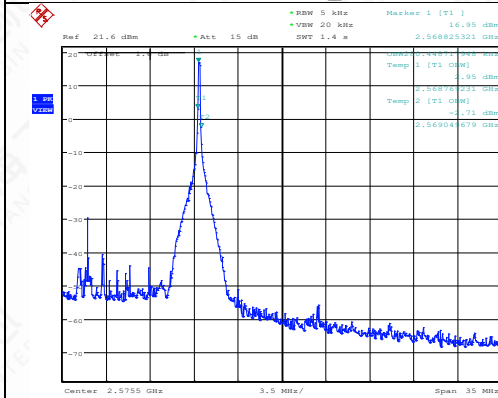




Date: 9.JAN.2023 15:33:08

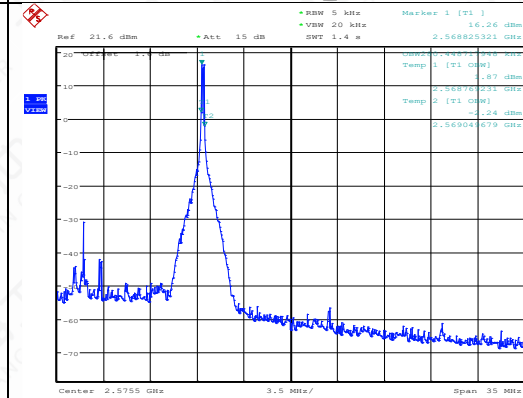
Date: 9.JAN.2023 15:26:30

1RB-HIGH_offset



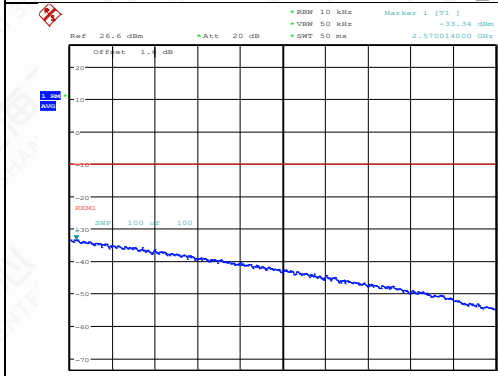
Date: 9.JAN.2023 17:19:01

1RB-HIGH_offset



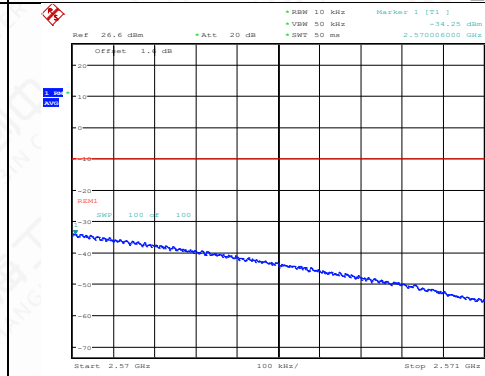
Date: 9.JAN.2023 17:21:37

HIGH BAND EDGE BLOCK-1RB-HIGH_offset



Date: 9.JAN.2023 17:19:50

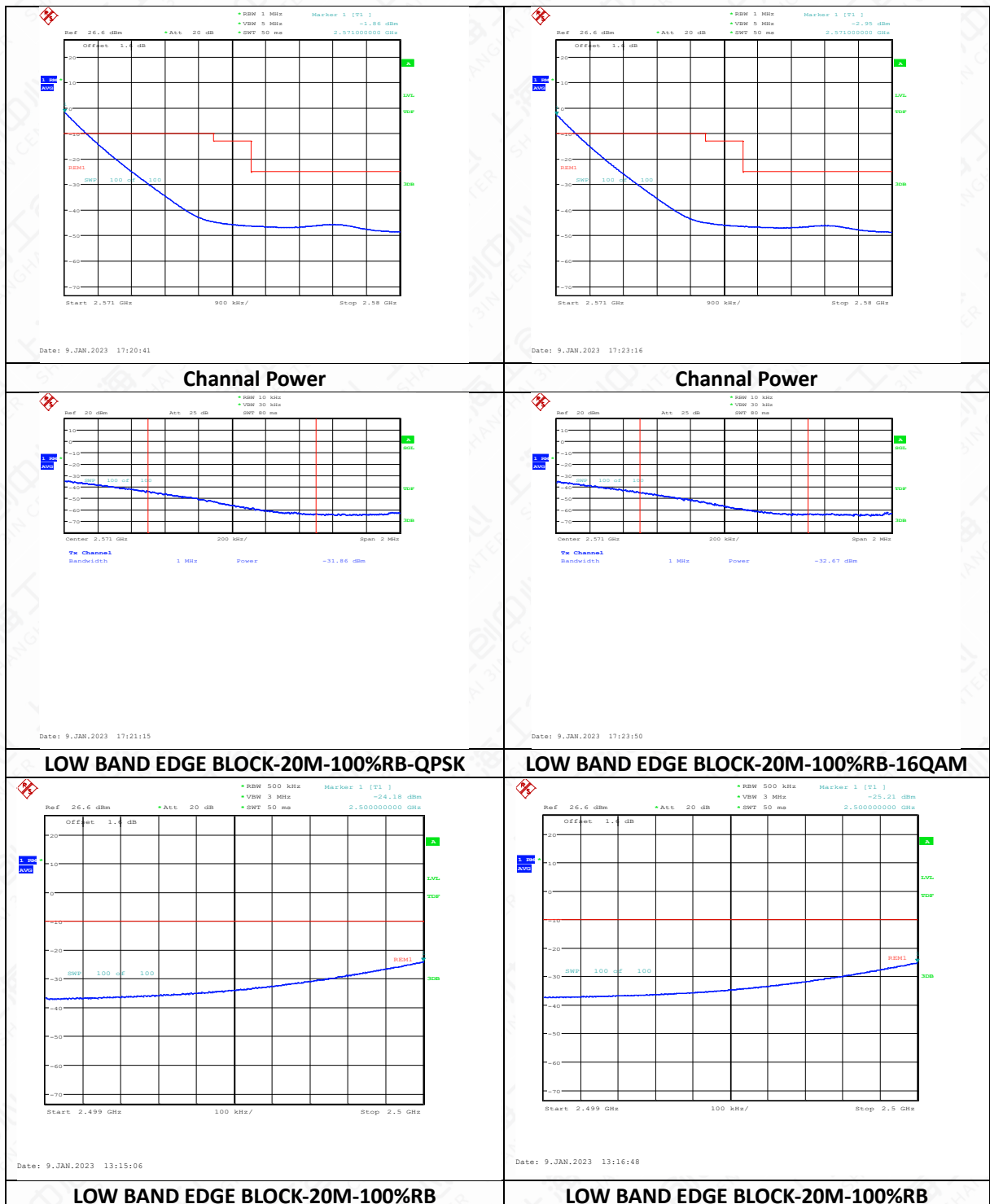
HIGH BAND EDGE BLOCK-1RB-HIGH_offset

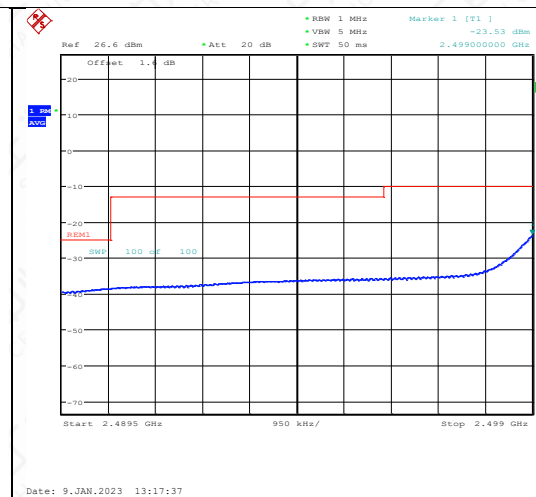
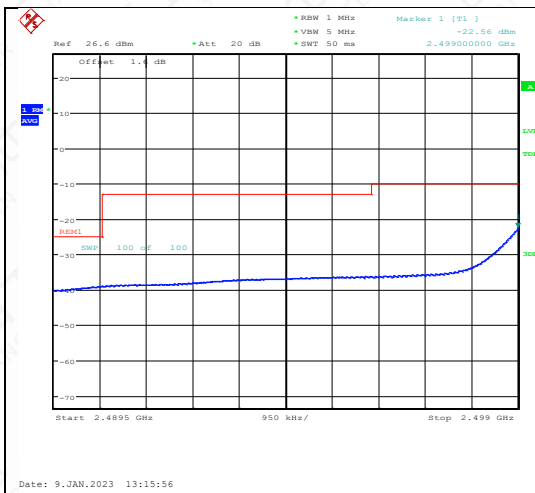


Date: 9.JAN.2023 17:22:25

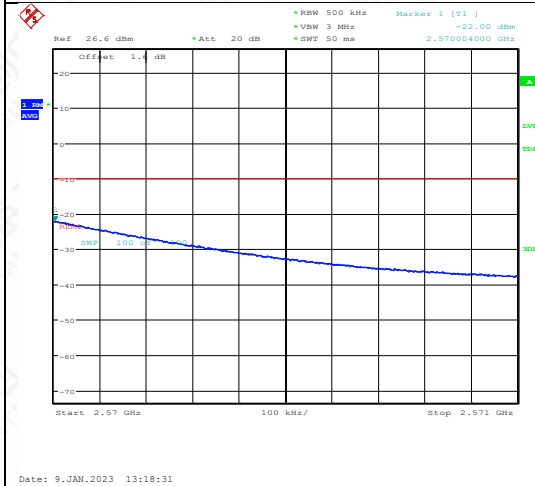
HIGH BAND EDGE BLOCK-1RB-HIGH_offset

HIGH BAND EDGE BLOCK-1RB-HIGH_offset

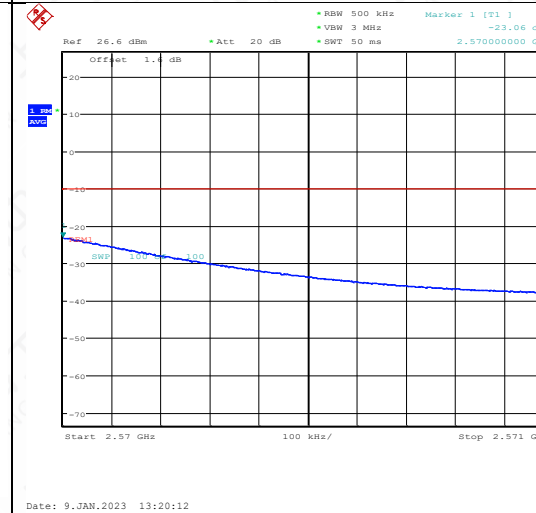




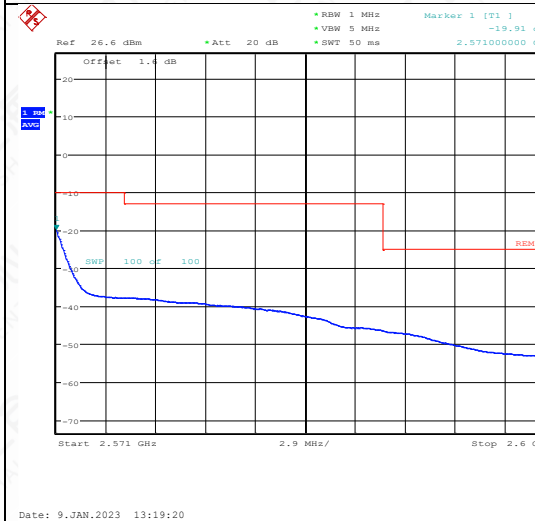
HIGH BAND EDGE BLOCK-20M-100%RB-QPSK



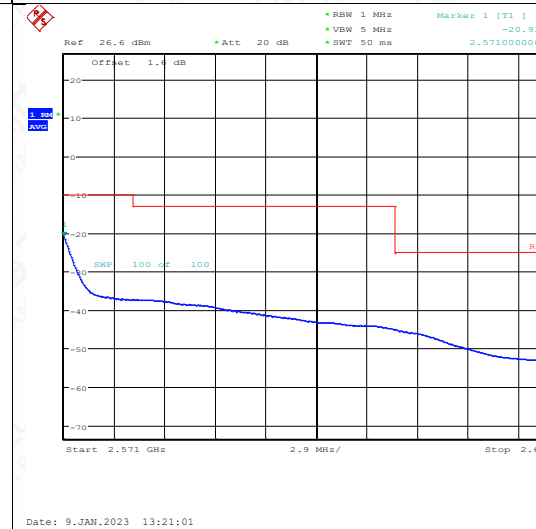
HIGH BAND EDGE BLOCK-20M-100%RB-16QAM



HIGH BAND EDGE BLOCK-20M-100%RB



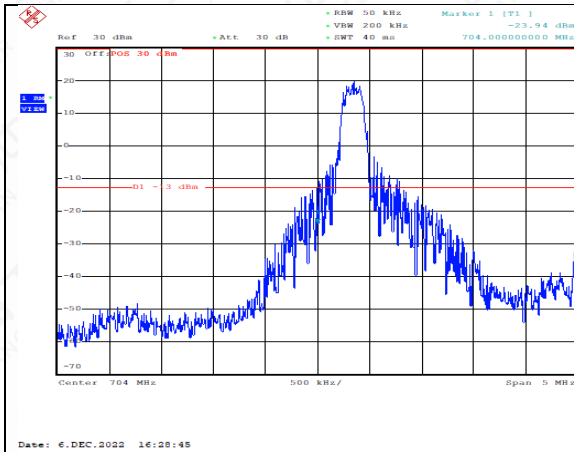
HIGH BAND EDGE BLOCK-20M-100%RB



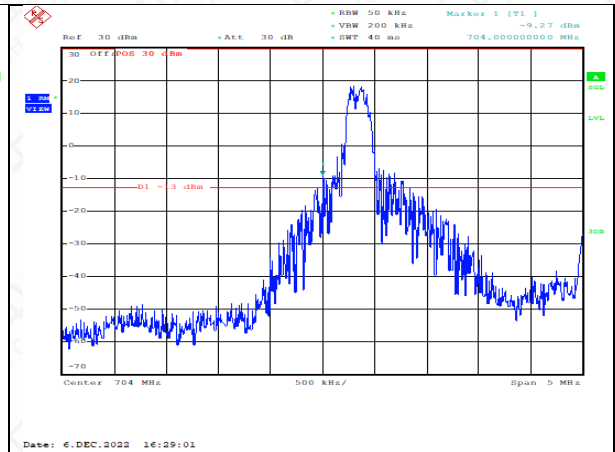
LTE band 17

FDD17_5MHz_706.5_OneRB_low_QPSKLowRange

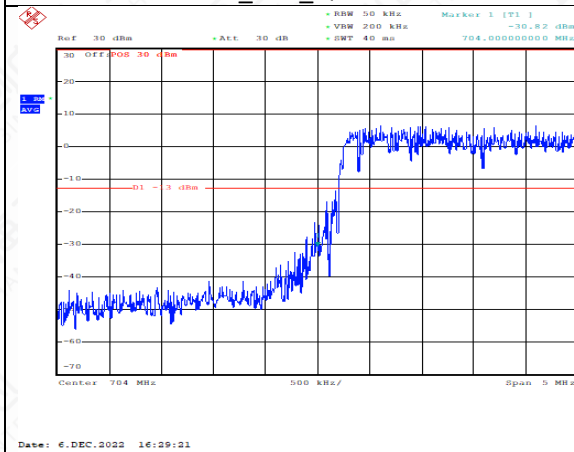
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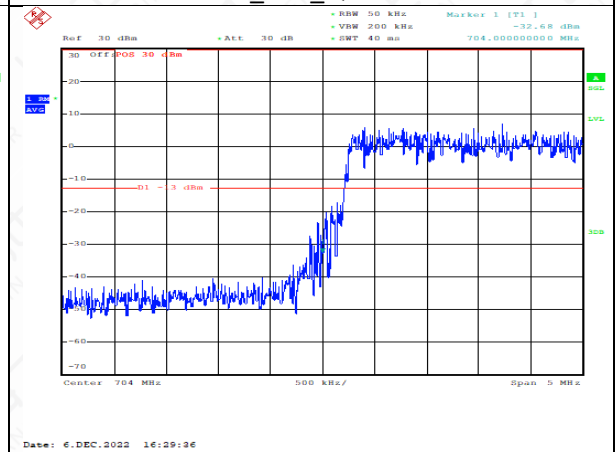
LowRange_FDD17_5MHz_706.5_fullIRB
_Low_QPSK



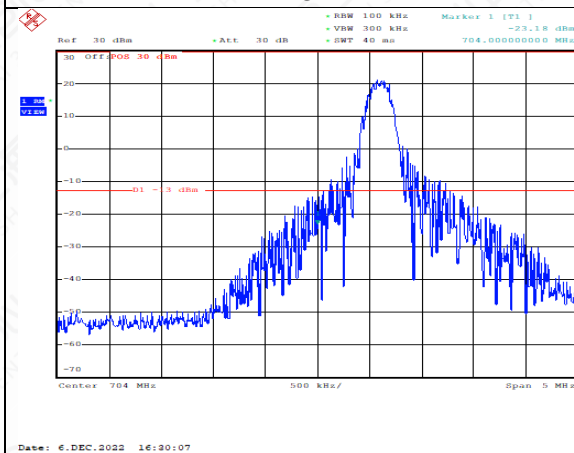
LowRange_FDD17_5MHz_706.5_fullIRB
_Low_Q16



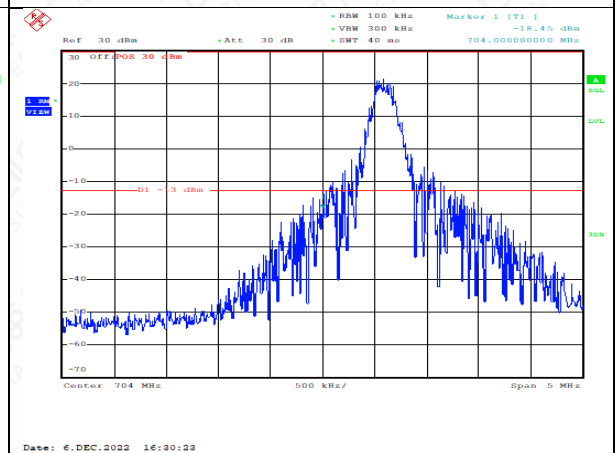
FDD17_10MHz_709_OneRB_low_QPSKLowRange



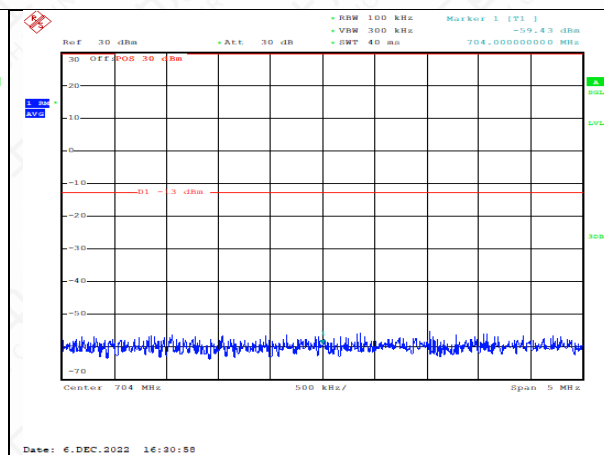
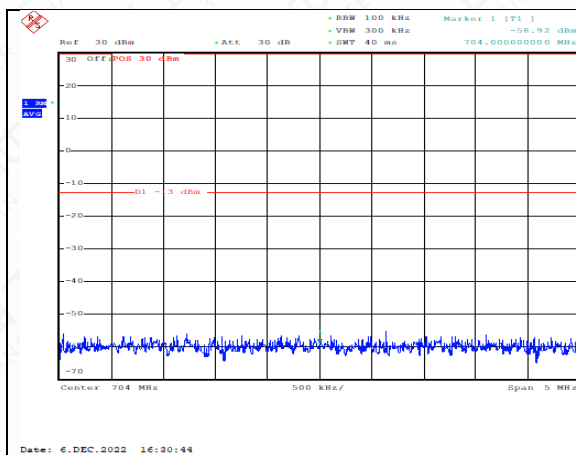
FDD17_10MHz_709_OneRB_low_Q16LowRange



LowRange_FDD17_10MHz_709_fullIRB
_Low_QPSK

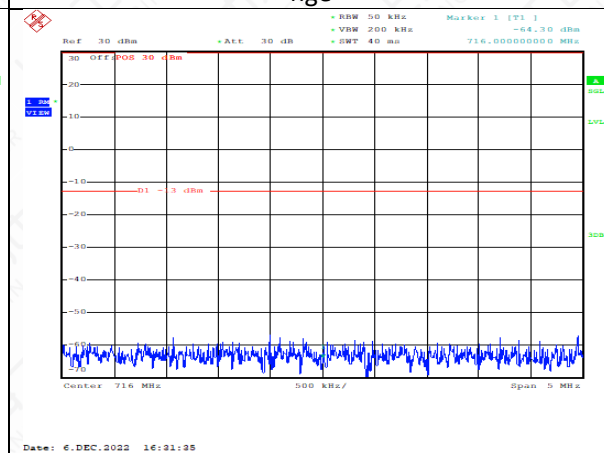
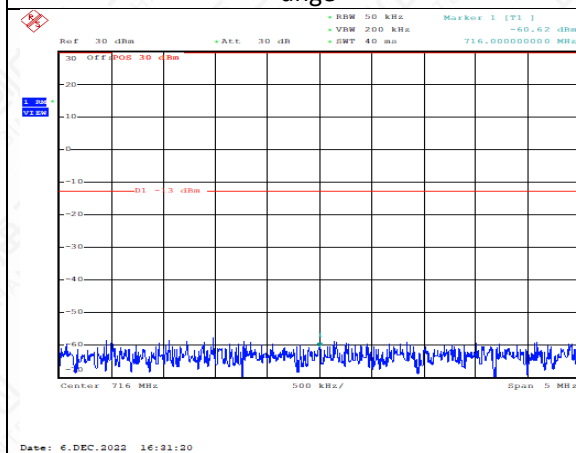


LowRange_FDD17_10MHz_709_fullIRB
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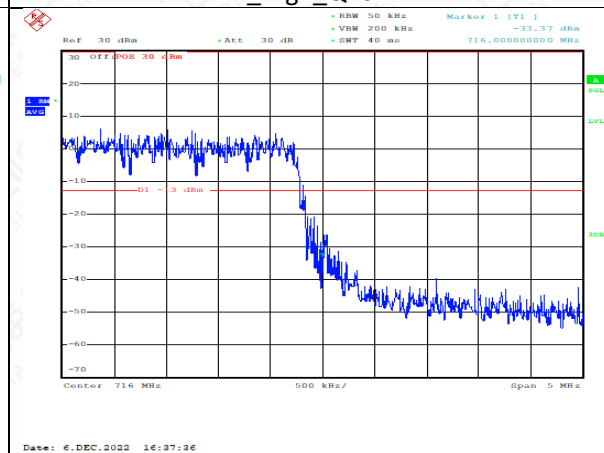
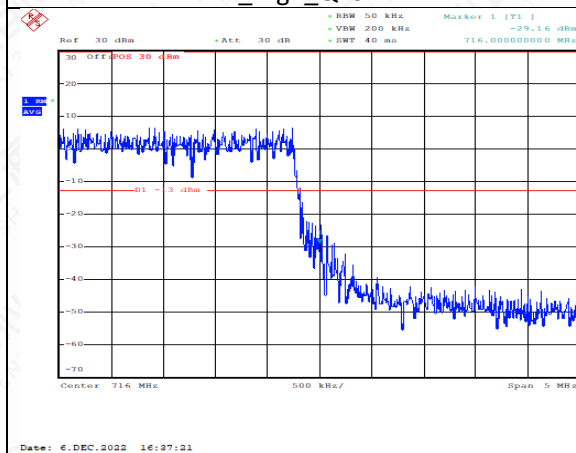
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FDD17_5MHz_713.5_OneRB_high_Q16HighRange



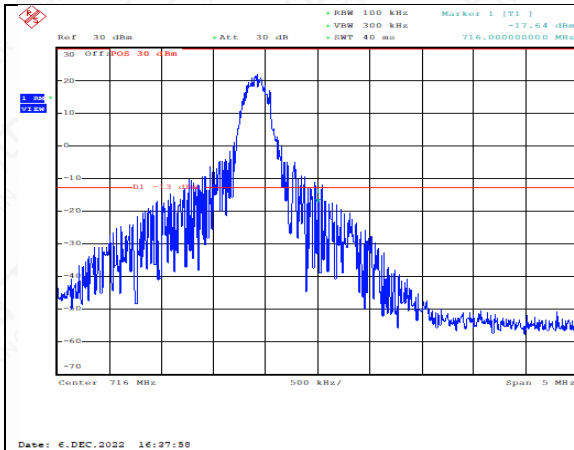
HighRange_FDD17_5MHz_713.5_fullRB_High_QPSK

HighRange_FDD17_5MHz_713.5_fullRB_High_Q16

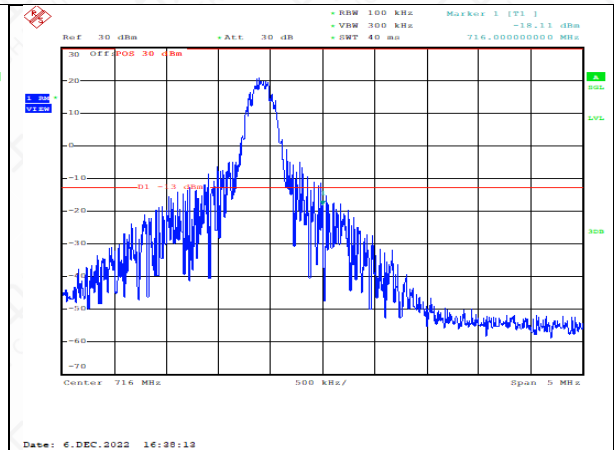


FDD17_10MHz_711_OneRB_high_QPSKHighRange

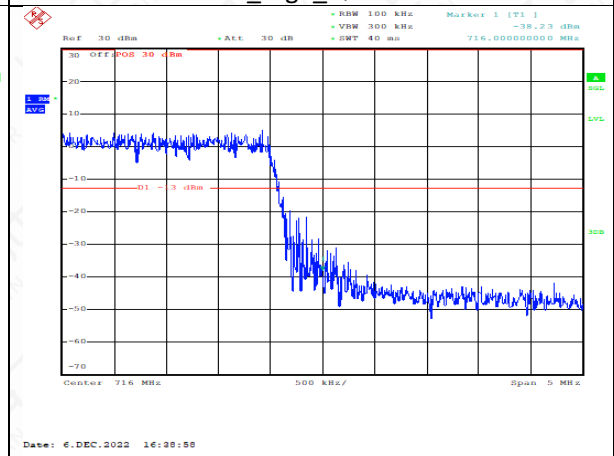
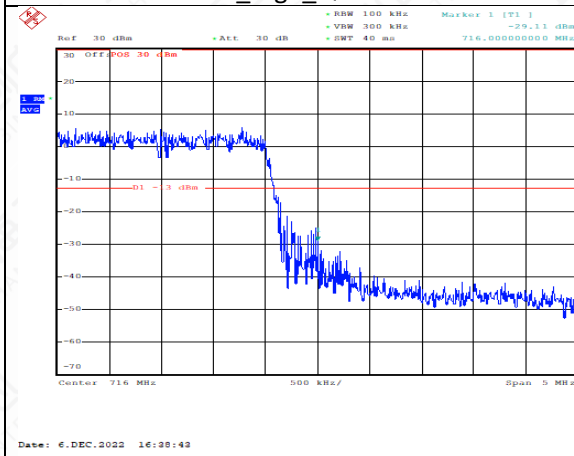
FDD17_10MHz_711_OneRB_high_Q16HighRange



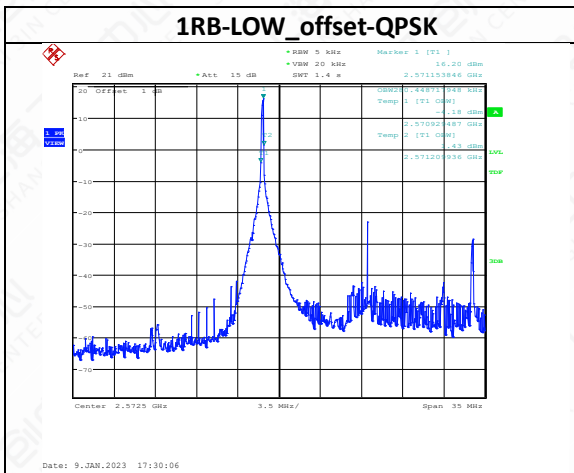
HighRange_FDD17_10MHz_711_fullRB
_High_QPSK



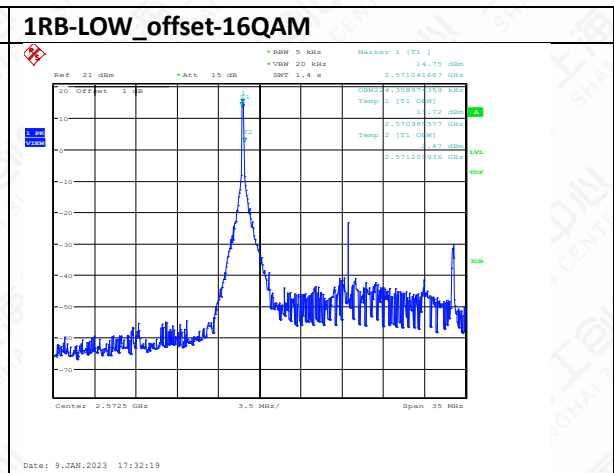
HighRange_FDD17_10MHz_711_fullRB
_High_Q16



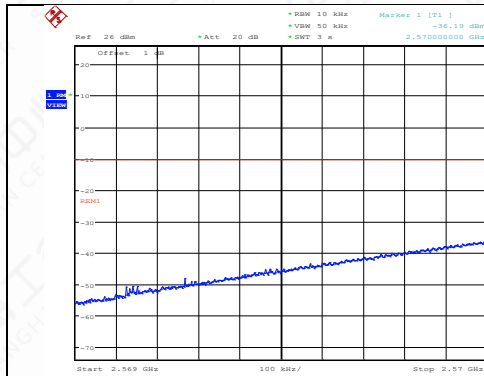
LTE band 38



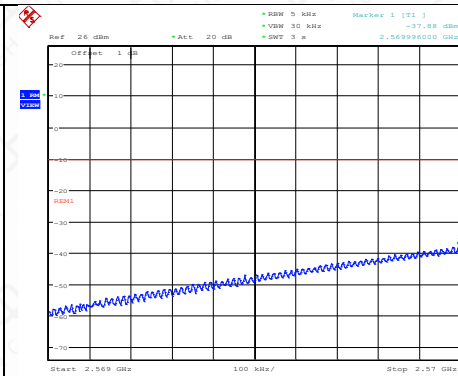
LOW BAND EDGE BLOCK-1RB-LOW_offset



LOW BAND EDGE BLOCK-1RB-LOW_offset

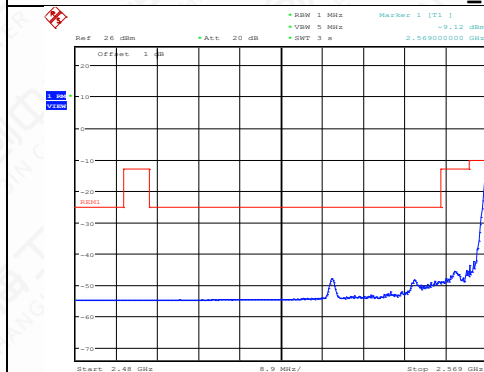


Date: 9.JAN.2023 17:30:49



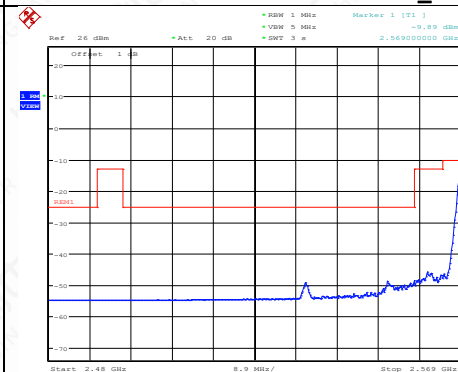
Date: 9.JAN.2023 17:33:02

LOW BAND EDGE BLOCK-1RB-LOW_offset



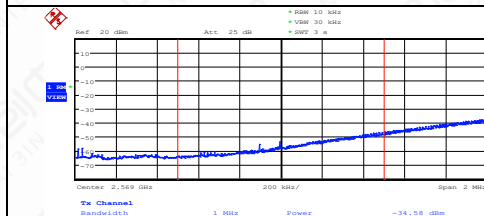
Date: 9.JAN.2023 17:31:32

LOW BAND EDGE BLOCK-1RB-LOW_offset



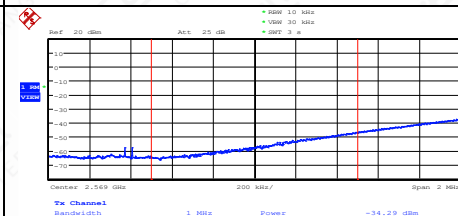
Date: 9.JAN.2023 17:33:45

Channel Power



Date: 9.JAN.2023 17:31:57

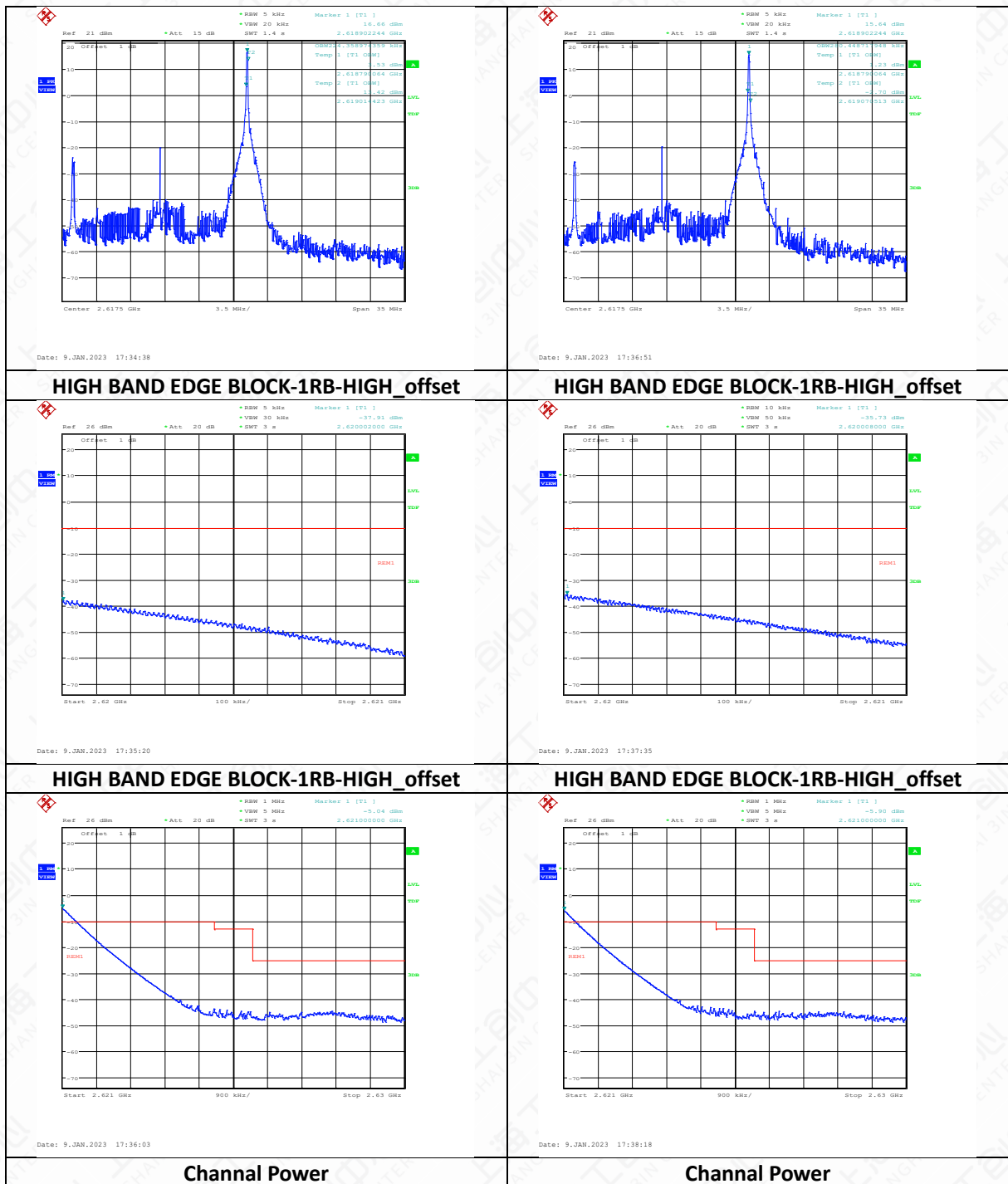
Channel Power



Date: 9.JAN.2023 17:34:12

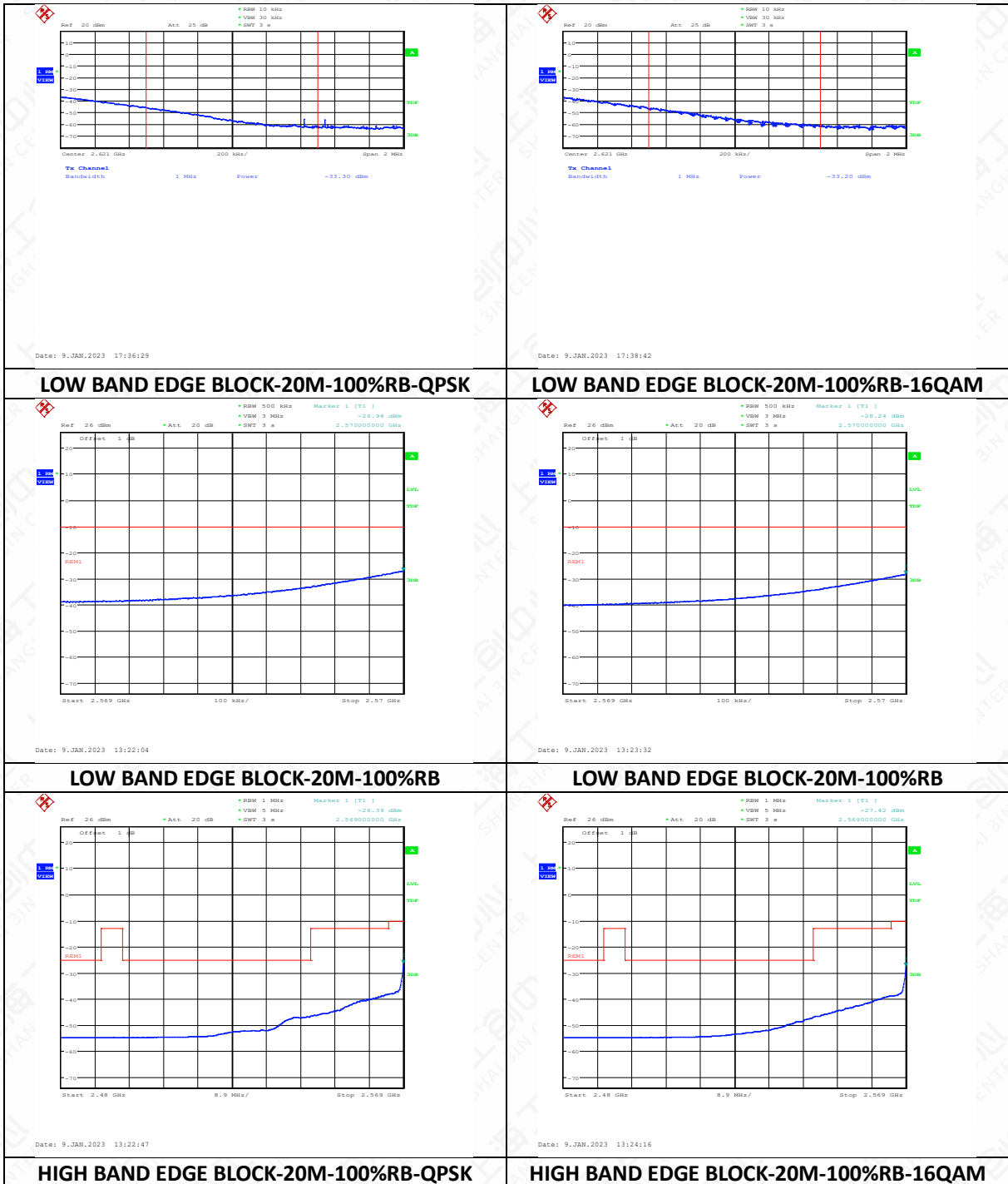
1RB-HIGH_offset

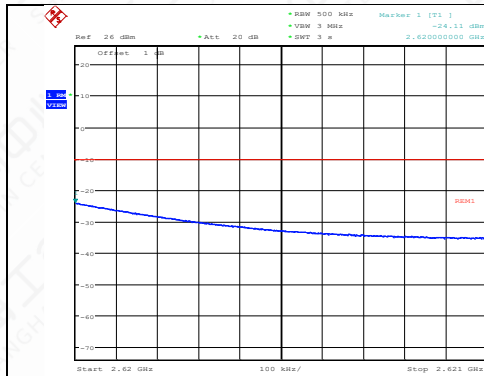
1RB-HIGH_offset



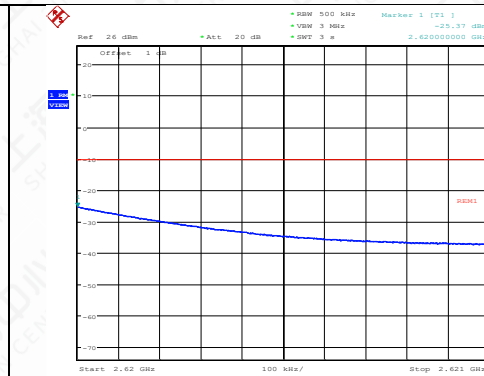
Channel Power

Channel Power



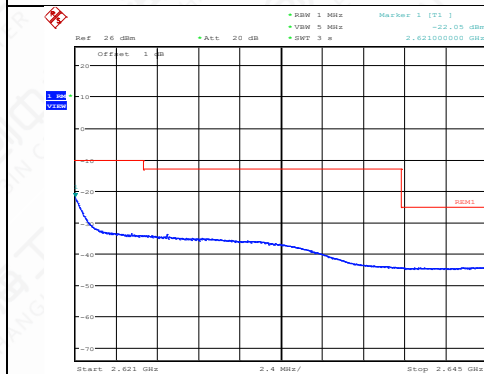


Date: 9.JAN.2023 13:25:05



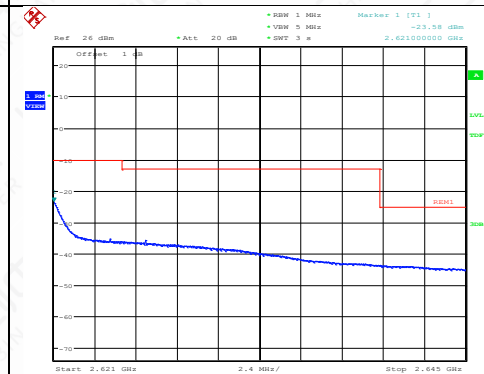
Date: 9.JAN.2023 13:26:34

HIGH BAND EDGE BLOCK-20M-100%RB



Date: 9.JAN.2023 13:25:49

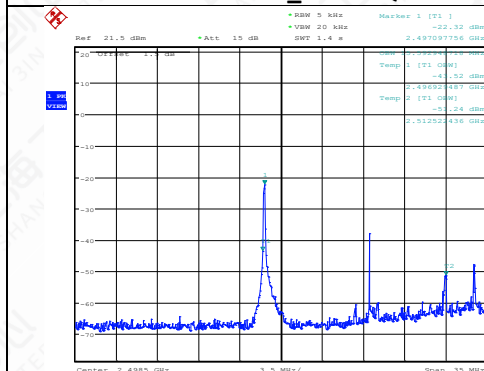
HIGH BAND EDGE BLOCK-20M-100%RB



Date: 9.JAN.2023 13:27:16

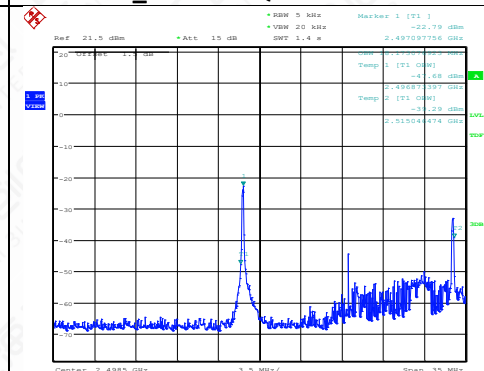
LTE band 41

1RB-LOW_offset-QPSK



Date: 9.JAN.2023 17:39:11

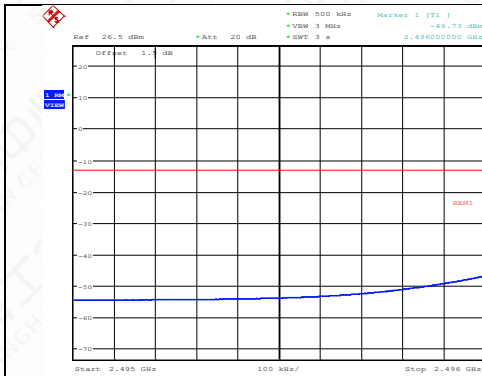
1RB-LOW_offset-16QAM



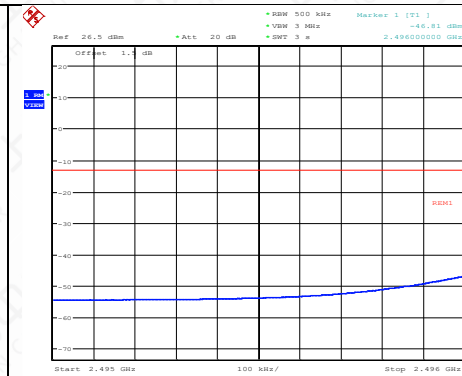
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LOW BAND EDGE BLOCK-1RB-LOW_offset

LOW BAND EDGE BLOCK-1RB-LOW_offset

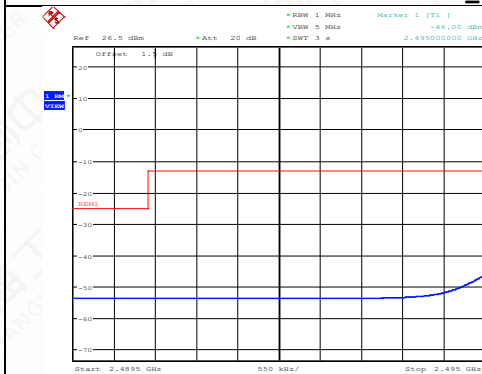


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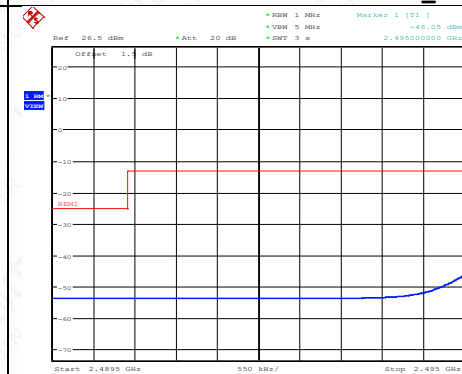
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LOW BAND EDGE BLOCK-1RB-LOW_offset



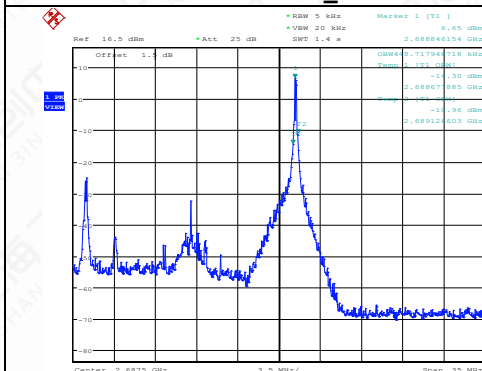
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LOW BAND EDGE BLOCK-1RB-LOW_offset



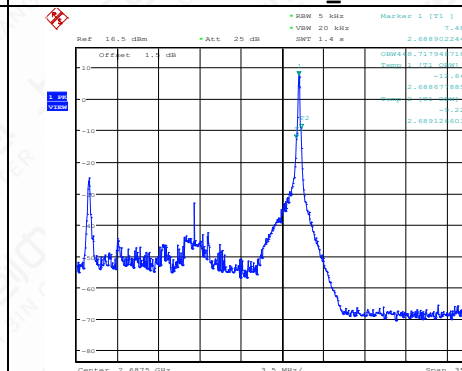
Date: 9.JAN.2023 17:42:25

1RB-HIGH_offset



Date: 9.JAN.2023 17:42:51

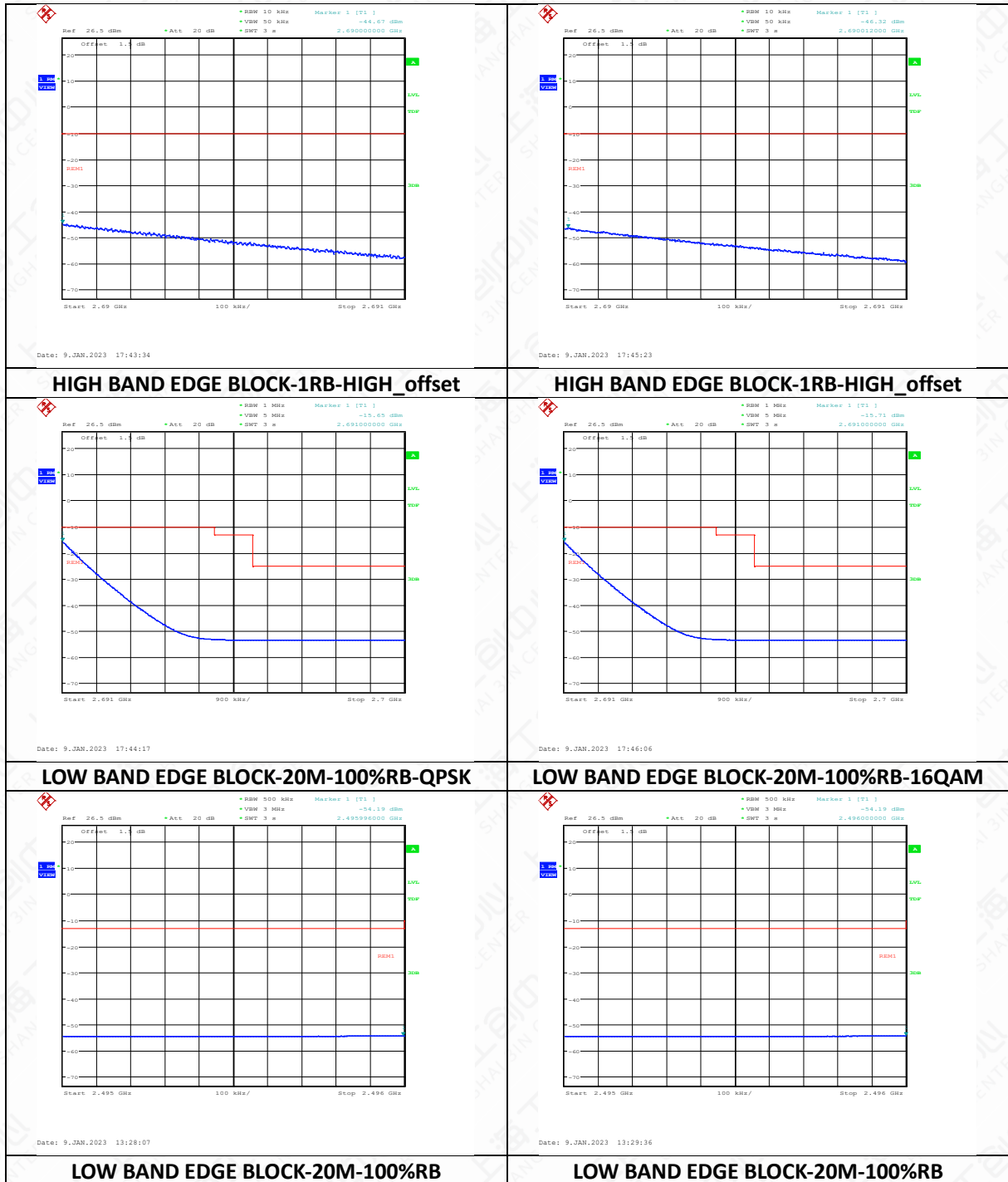
1RB-HIGH_offset

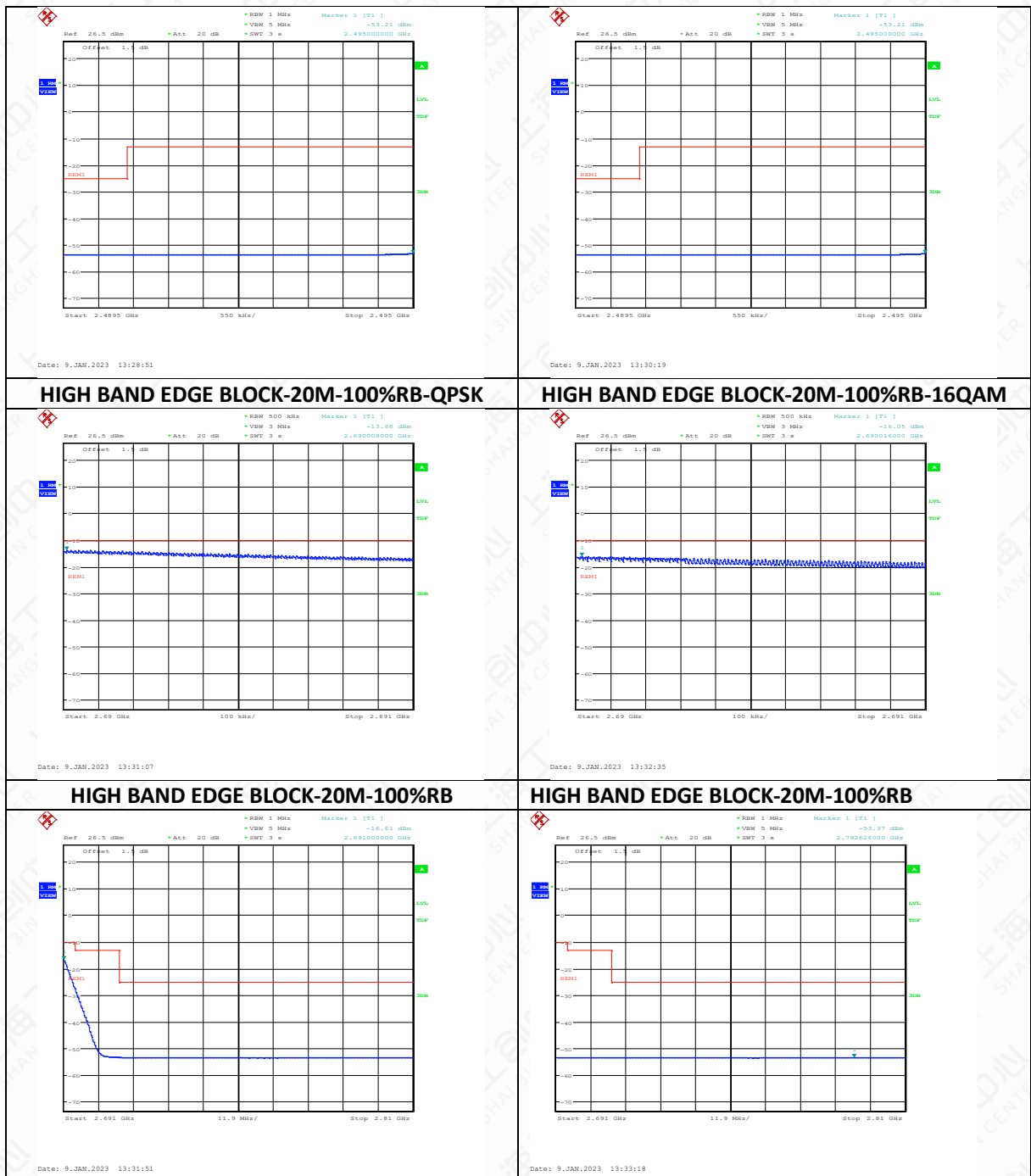


Date: 9.JAN.2023 17:44:40

HIGH BAND EDGE BLOCK-1RB-HIGH_offset

HIGH BAND EDGE BLOCK-1RB-HIGH_offset





6.7 Conducted Spurious Emission

6.7.1 Measurement Method

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the mobile station equipment tested, this equates to a frequency range of 13 MHz to 9 GHz, data taken from 10 MHz to 25 GHz.
2. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.
3. The number of sweep points of spectrum analyzer is set to 30001 which is greater than span/RBW.

6.7.2 Measurement Limit

Part 27.53(g), 27.53(h), 27.53(m) specify that 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.

The specification that emissions shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

Part 27.53(m)(4) specifies 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.

Rule RSS-132 5.5 specifies that " In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required." Limit -13 dBm

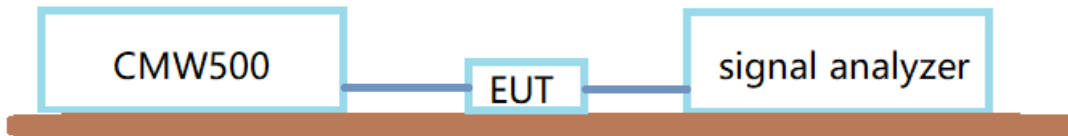
Rule RSS-133 6.5 specifies that " In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts).

After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required." Limit -13 dBm

Rule RSS-139 6.6 specifies that " In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block, 2 which can contain the equipment's occupied

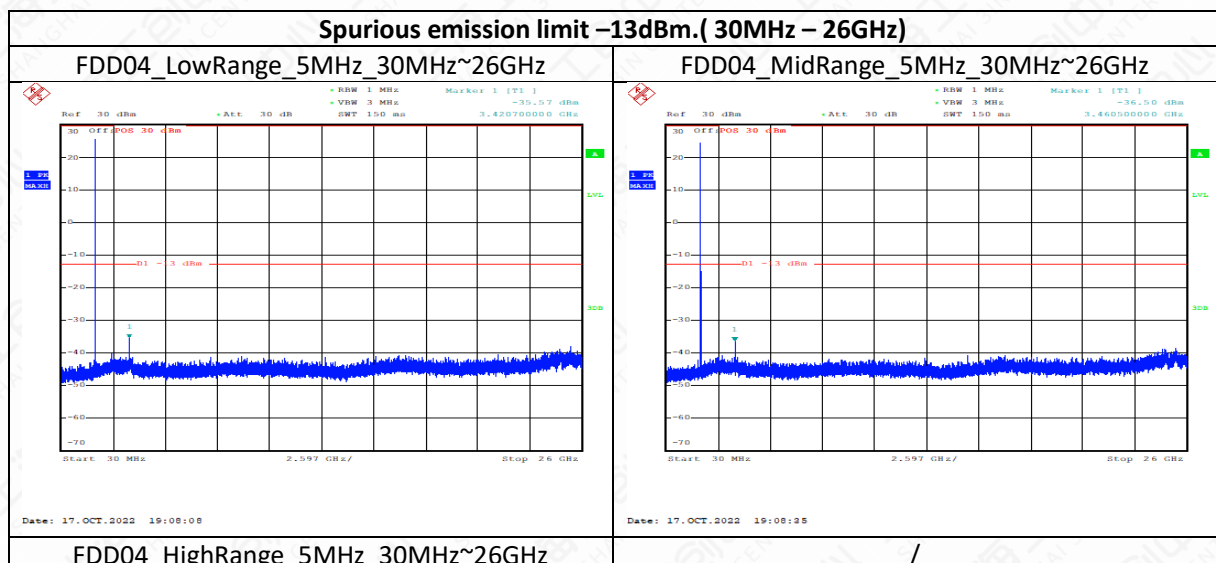
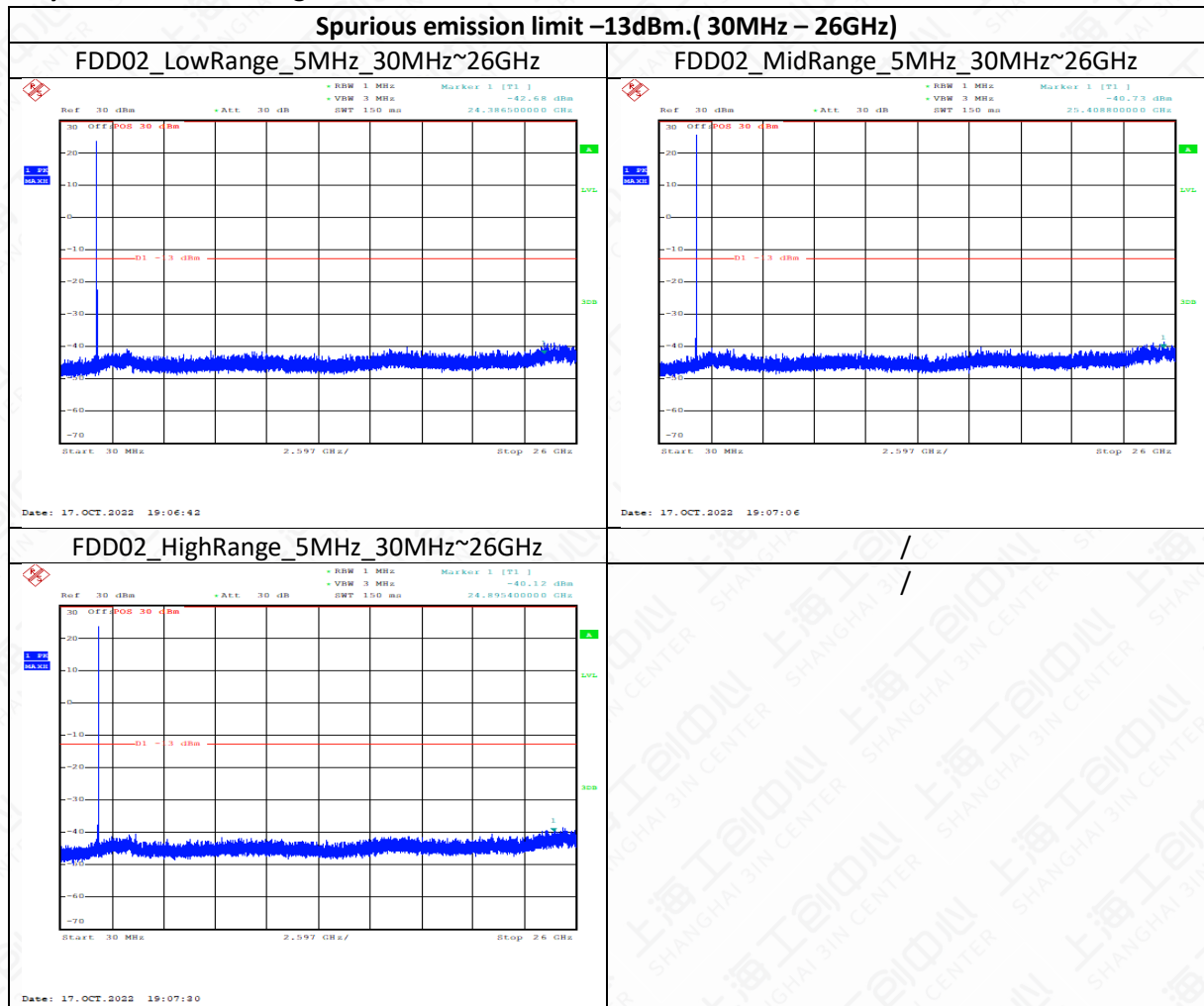
bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least $43 + 10 \log_{10} p$ (watts) dB. (ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least $43 + 10 \log_{10} p$ (watts) dB.

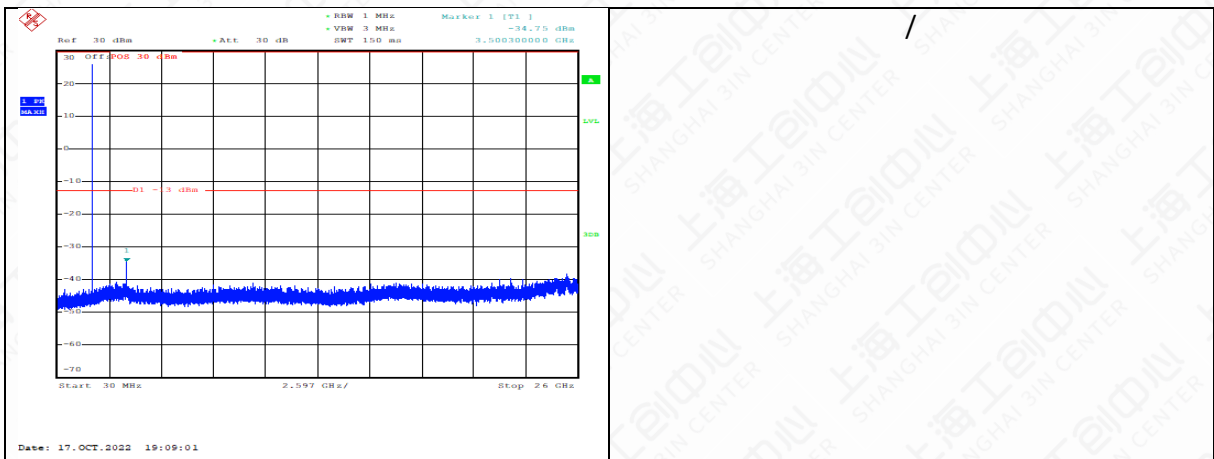
6.7.3 Test Setup



6.7.4 Measurement result

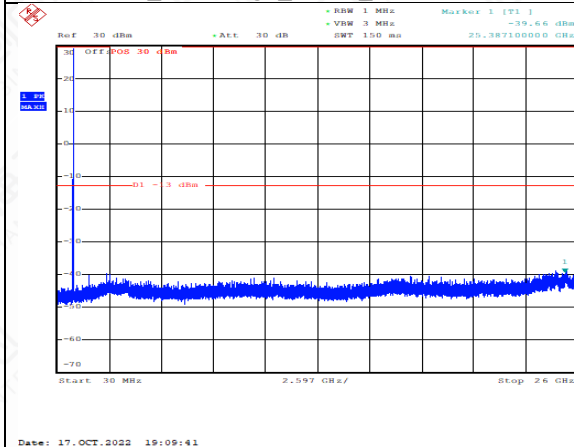
Only worst case result is given below



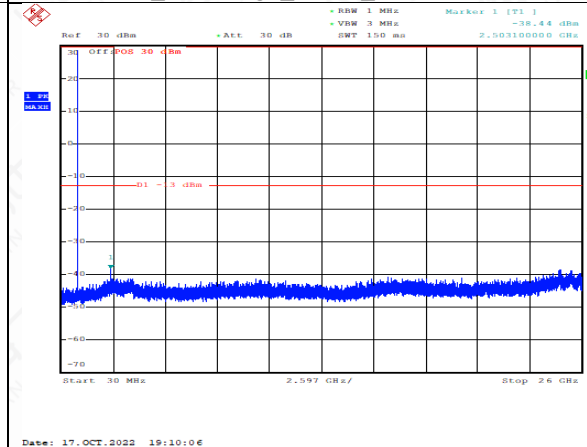


Spurious emission limit -13dBm.(30MHz – 26GHz)

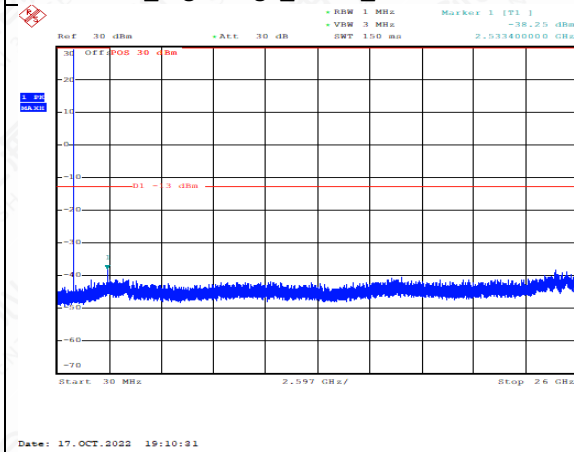
FDD05_LowRange_5MHz_30MHz~26GHz



FDD05_MidRange_5MHz_30MHz~26GHz



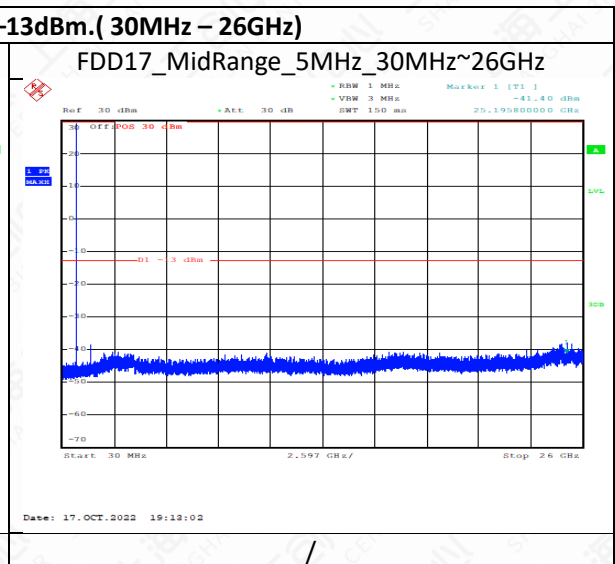
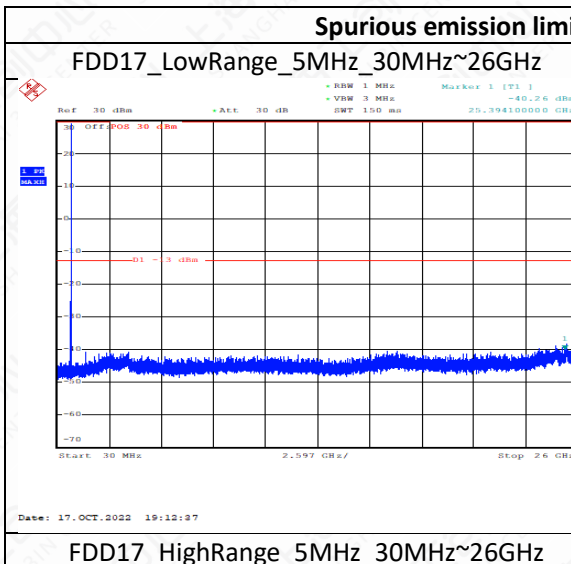
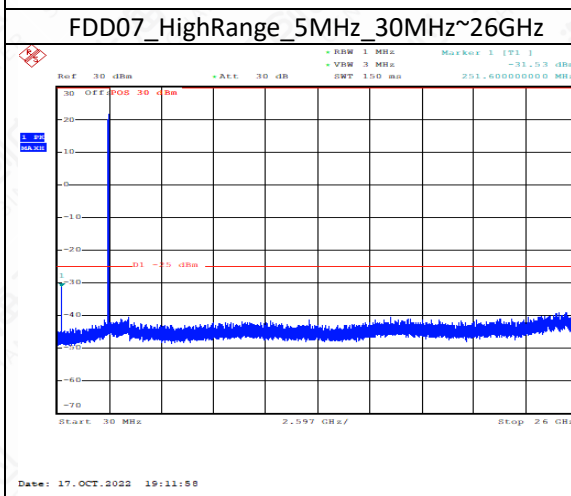
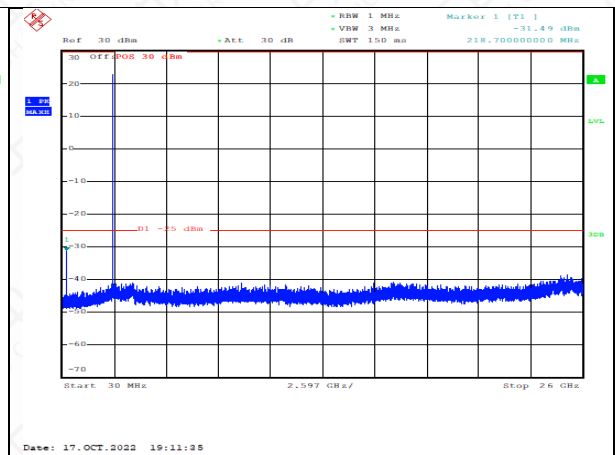
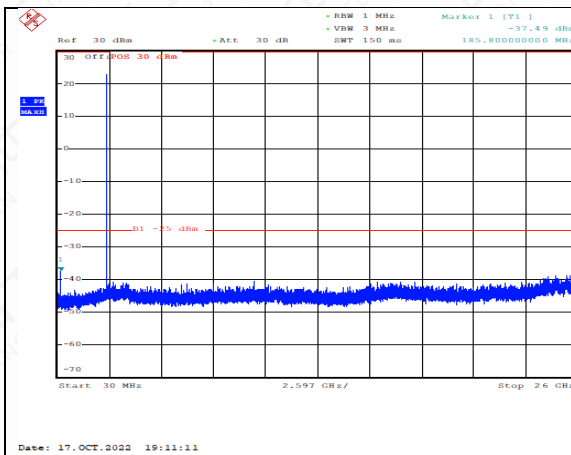
FDD05_HighRange_5MHz_30MHz~26GHz

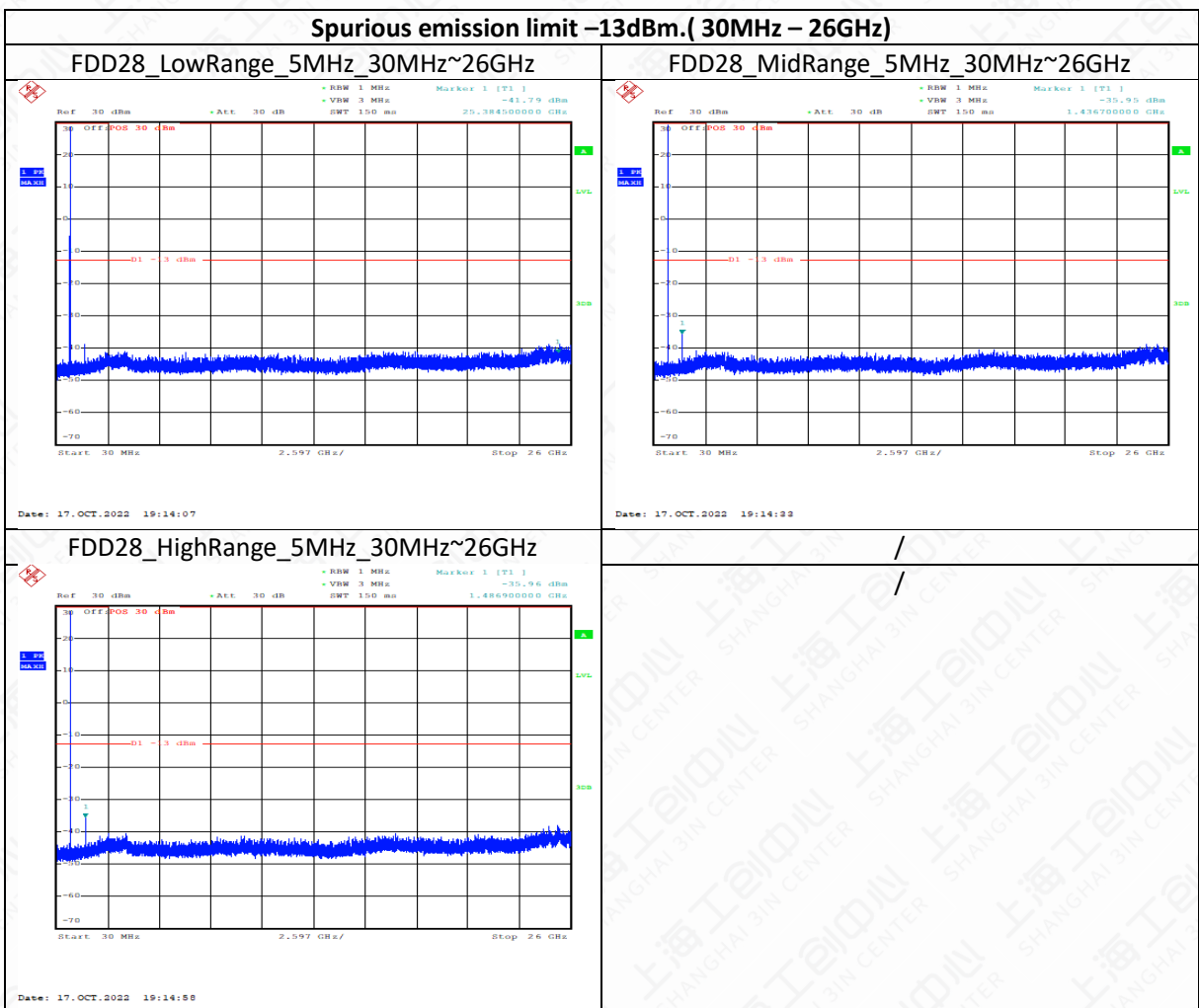
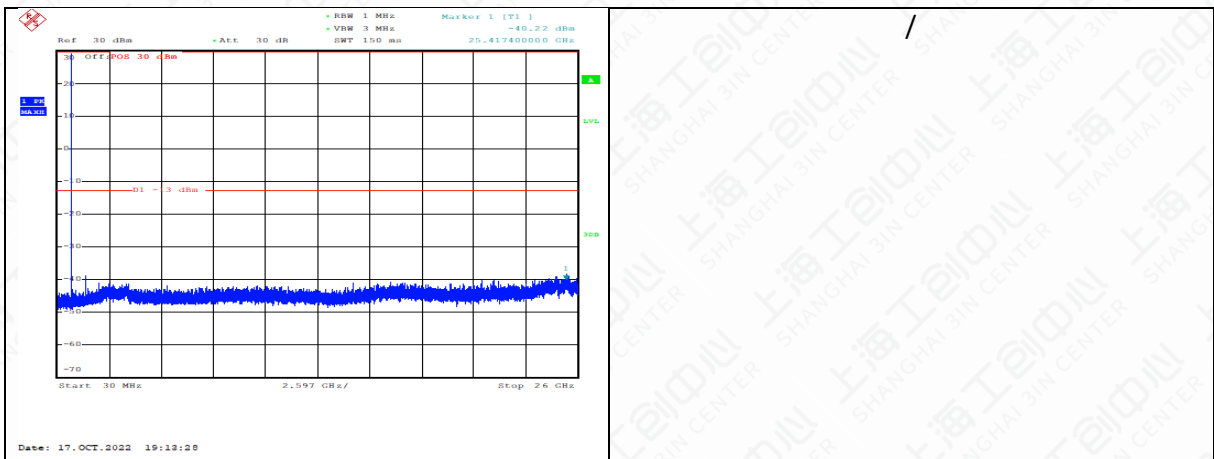


Spurious emission limit -13dBm.(30MHz – 26GHz)

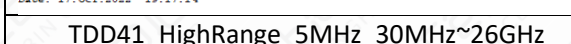
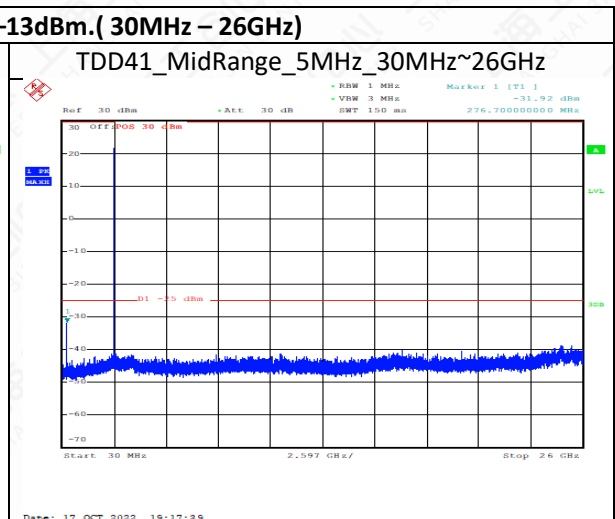
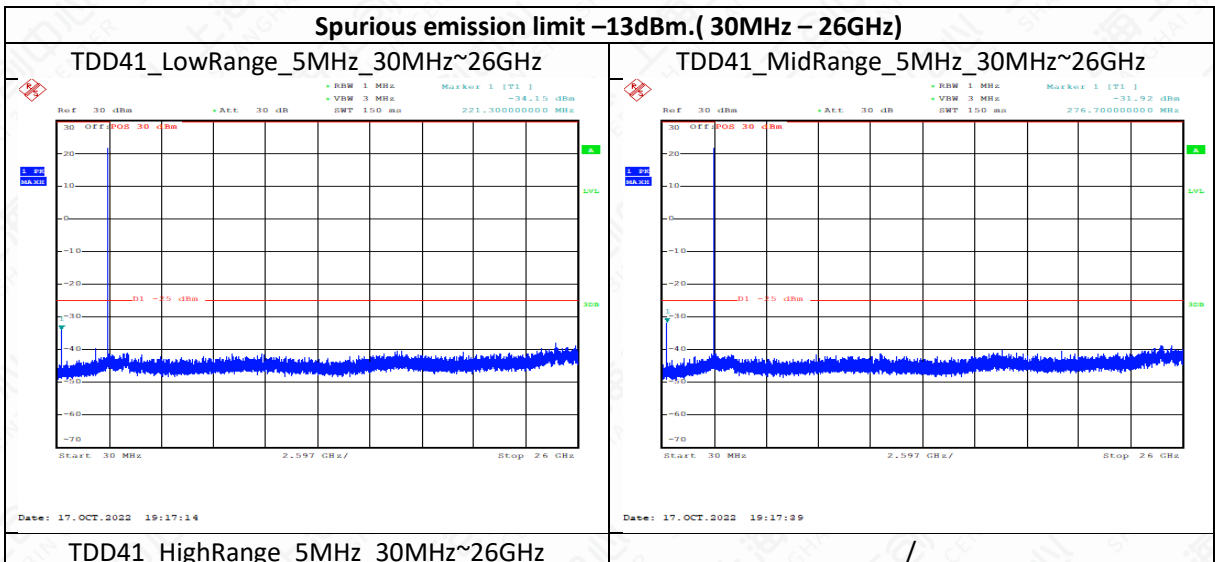
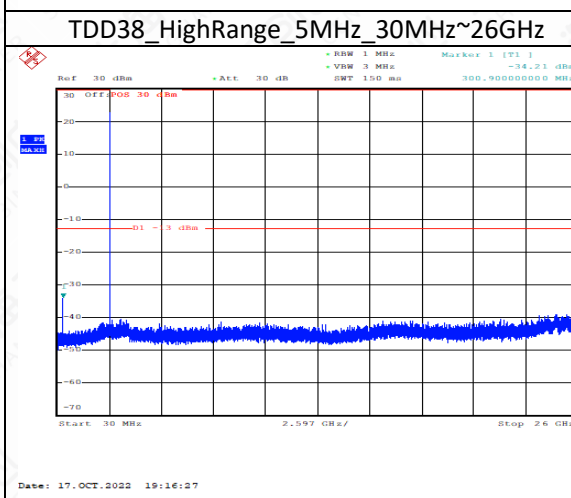
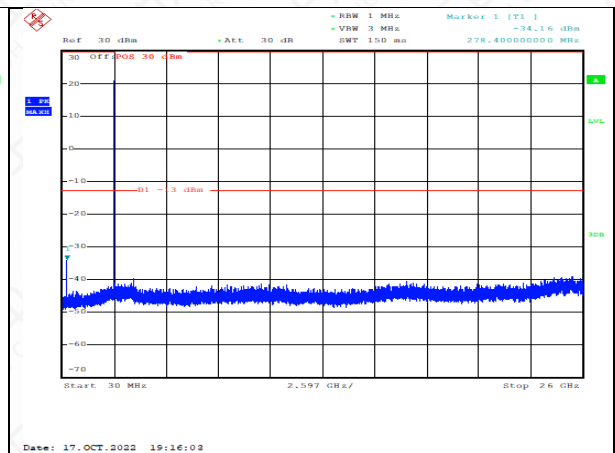
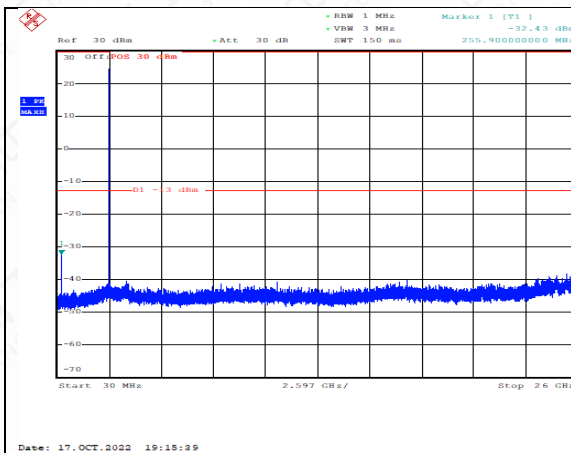
FDD07_LowRange_5MHz_30MHz~26GHz

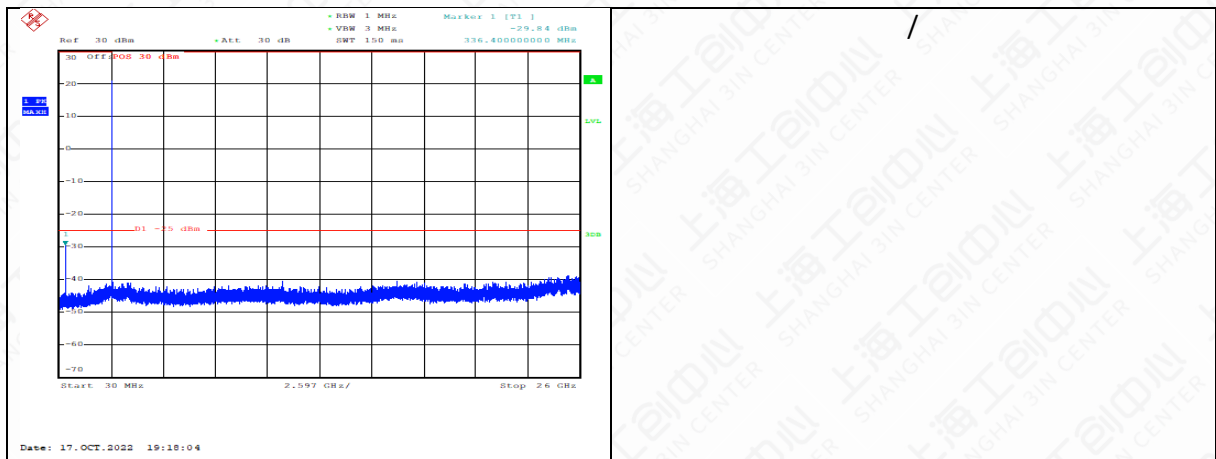
FDD07_MidRange_5MHz_30MHz~26GHz





Spurious emission limit -13dBm.(30MHz – 26GHz)	
TDD38_LowRange_5MHz_30MHz~26GHz	TDD38_MidRange_5MHz_30MHz~26GHz





6.8 Peak-To-Average Power Ratio

Reference

CFR Part2.1049,24.238, 24.232 (d), 27.50(a)

Rule RSS 130 4.6,Rule RSS-132 5.4, Rule RSS-133 6.4, Rule RSS-139 6.5, Rule RSS-199 4.4

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

According to KDB 971168 5.7:

- Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
- Set the number of counts to a value that stabilizes the measured CCDF curve;
- Set the measurement interval to 1 ms
- Record the maximum PAPR level associated with a probability of 0.1%

Rule RSS-132: 5.4: the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission. Limit $\leq$ 13dB

Rule RSS-133 6.4 specifies that " the transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission." Limit $\leq$ 13dB

Rule RSS-139 6.5 specifies that "In addition, the peak to average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1% of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission."

Rule RSS-199 4.4 specifies that "In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

6.8.1 Test Setup



6.8.2 Measurement results

Only worst result is given below

LTE band 2, 20MHz

Frequency(MHz)	PAPR(dB)	
	QPSK	16QAM
1880.0	4.94	6.31

LTE band 4, 20MHz

Frequency(MHz)	PAPR(dB)	
1732.5	QPSK	16QAM
	4.97	6.25

LTE band 5, 10MHz

Frequency(MHz)	PAPR(dB)	
836.5	QPSK	16QAM
	5.51	6.22

LTE band 7, 20MHz

Frequency(MHz)	PAPR(dB)	
2535	QPSK	16QAM
	4.97	6.28

LTE band 17,10MHz

Frequency(MHz)	PAPR(dB)	
710	QPSK	16QAM
	3.56	4.01

LTE band 38, 20MHz

Frequency(MHz)	PAPR(dB)	
2595	QPSK	16QAM
	7.60	10.74

LTE band 41, 20MHz

Frequency(MHz)	PAPR(dB)	
2593	QPSK	16QAM
	7.60	10.71

Annex A: Revised History

Version	Revised Content
V00	Initial
V01	Modify and update some data
V02	Changed the equipment information and reference standard version
V03	Modify equipment calibration date and test time

Annex B: Accreditation Certificate



END OF REPORT