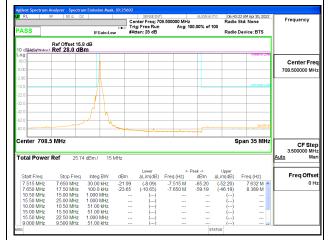
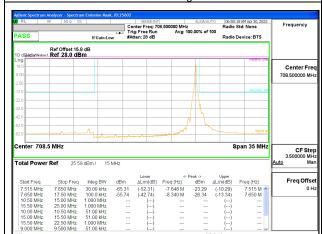


Page 194 of 597





5G NR n12 15MHz BPSK High Channel RB1-0

#### 5G NR n12 15MHz BPSK High Channel RB1-78

ASS	S IFGain:Low				08.500000 MHz Avg: 1	ALIGNAUTO	Radio 0	34 AM Apr 30, 2022 Std: None Device: BTS	Frequency
0 d <b>Bridia</b> Window	Ref Offset 15. Ref 28.0 dE								
.og								Reserve Lime	Center Fre
8.00									708.500000 MH
200		portuna per		and a source	masterne and	<u>م</u>			100.000000 111
2.0								Absolute Linit	
2.0							_		
2.0						1			
2.0	m	~~~				m	$\sim$		
2.0						_		Spectrum	
2.0						_			
enter 708	.5 IVIHZ							Span 35 MHz	CF Ste
otal Powe	r Dof 250	1 dBm / 15	MHz						3.500000 MI Auto M
otal Fowe	IRCI 23.0	TUDIII/ 10	IVIP12						
-				Lower		Peak ->	Upper		Freq Offs
Start Freq 7.515 MHz	Stop Freq 7.650 MHz	Integ BW 30.00 kHz	dBm -33.26	ΔLim(dB) (-20.26)	Freq (Hz) -7.516 M	dBm /	Lim(dB) (-27.06)	Freq (Hz) 7.641 M	Frequis
7.515 MHz	17.50 MHz	100.0 kHz	-33.20	(-20.26) (-18.27)	-7.650 M	-40.06	(-22.32)	7.650 M	
10.50 MHz	15.00 MHz	1.000 MHz		()			()		
15.50 MHz	25.00 MHz	1.000 MHz		()			()		
10.00 MHz	10.50 MHz	51.00 kHz		()			()		
15.00 MHz	15.50 MHz	51.00 kHz		()			()		
	22.50 MHz 9.500 MHz	1.000 MHz 51.00 kHz		()			()		
15.50 MHz				()					
15.50 MHz 9.000 MHz	3.000 Williz					STA			

Page 195 of 597

# 9.2.4. LTE BAND 13 EMISSION MASK

### <u>LIMITS</u>

#### FCC: §27.53

(c)For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

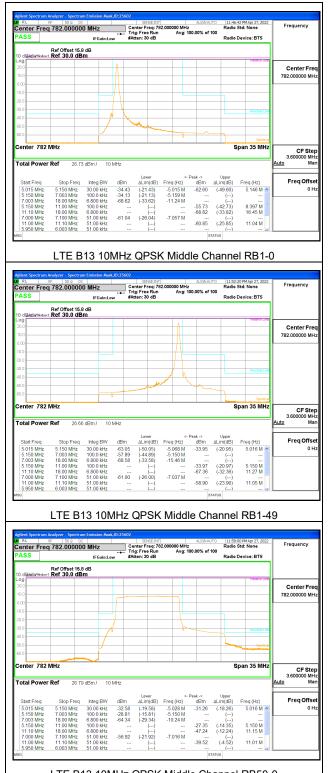
(6) Compliance with the provisions of paragraphs (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(f) Emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals. (-70 dBW/MHz = -40dBm/MHz).

Page 196 of 597



Page 197 of 597



LTE B13 10MHz QPSK Middle Channel RB50-0

Page 198 of 597

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4031B 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 319-4000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of UL Verification Services Inc.

## 9.2.5. LTE BAND 14 AND 5G NR n14 EMISSION MASK

## <u>LIMITS</u>

FCC: §90.543 Emission Limitations.

(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

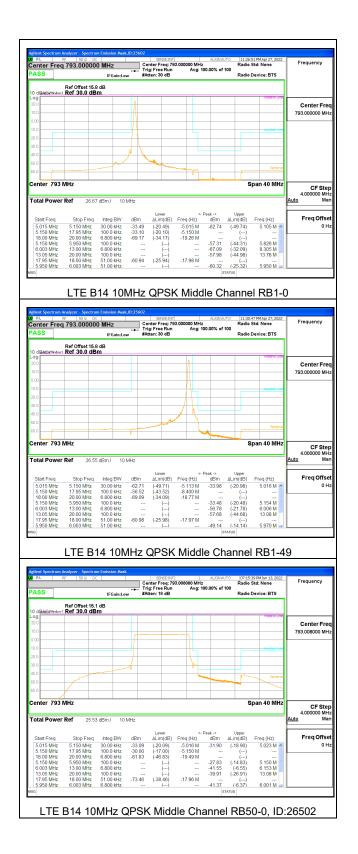
(f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

Page 199 of 597

### LTE BAND 14 EMISSION MASK



Page 200 of 597

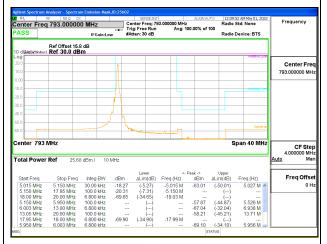


Page 201 of 597

### 5G NR n14 EMISSION MASK

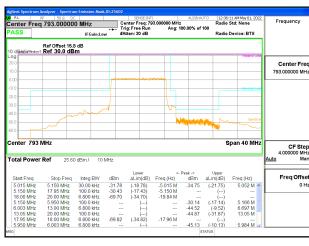


Page 202 of 597



RL	RF 50.0 D	c		SENSE:INT		ALIGN AUT	0 12:29	39 AM May 01, 2022	Frequency
Center F	rea 793.00000	0 MHz			3.000000 MHz			Std: None	Frequency
PASS		IFGain:Low		ig: Free Run tten: 30 dB	Avg: 1	00.00% of 1		Device: BTS	
10 dBieliaws	Ref Offset 15. ndow1 Ref 30.0 dE								
Log		/						Relative Line	
20.0						_			Center Fre
10.0					1				793.000000 MH
									793.000000 MP
0.00						-			
-10.0					A	_	_	Abookdo Lind	
-20.0			_						
					- 141				
-30.0									
-40.0					_ <u> </u> \	_			
-50.0					$-l' \rightarrow$				
-60.0					~			Spectrum	
-60.0			happen	and a second and a second and a second	~ \ \				
Center 7	0.0 Mille						_	Span 40 MHz	
Center 7	93 WHZ						•	span 40 Minz	CF Ste
									4.000000 MH
Total Por	wer Ref 25.6	7 dBm / 10 N	1Hz						<u>Auto</u> Ma
				Lower		Peak ->	Upper		Freq Offs
Start Free		Integ BW	dBm	∆Lim(dB)	Freq (Hz)		∆Lim(dB)	Freq (Hz)	
5.015 M		30.00 kHz	-62.32	(-49.32)	-5.034 M	-19.45	(-6.45)	5.015 M 📥	01
5.150 M		100.0 kHz	-56.39	(-43.39)	-5.950 M		()		
18.00 M		6.800 kHz 100.0 kHz	-69.59	(-34.59)	-19.12 M	-21.69	() (-8.69)	5.150 M	
6 003 M		6 800 kHz		()		-21.69	(-24.68)	6.081 M	
13.05 M		100.0 kHz		()		-58.00	(-45.00)	13.29 M	
17.95 M		6.800 kHz	-69.84	(-34.84)	-17.97 M		()		
5 950 M		6 800 kHz		()		-59.04	(-24.04)	5 997 M 📅	1

5G NR n14 10MHz QPSK Middle Channel RB1-0



5G NR n14 10MHz QPSK Middle Channel RB1-49

5G NR n14 10MHz QPSK Middle Channel RB50-0

Page 203 of 597

## 9.2.6. LTE BAND 17 EMISSION MASK

### LIMITS

### FCC: §27.53

(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Page 204 of 597



Page 205 of 597

Center Fred PASS	Ref Offset 15.8 dE	- IFGain:Low	Center Freq: 70 Trig: Free Run #Atten: 30 dB	9.000000 MHz	ALIGNAUTO	10:49:19 PMApr 27, 202 Radio Std: None Radio Device: BTS	Frequency	Center Frec PASS	Ref Offset 15.	IFGain:Lo 8 dB	Tri	SENSE:INT nter Freq: 7' g: Free Run ten: 30 dB	1.000000 MH:	ALIGNAU 100.00% of 1	Radio S 00	13 PM Apr 27, 2022 Std: None Device: BTS	Frequency
20.0 10.0 0.00							Center Freq 709.000000 MHz									Relative Line	Center Fr 711.000000 M
10.0 20.0 30.0 40.0 50.0		1				About is		-10.0 -20.0 -30.0 -40.0 -50.0		_/				6	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Abootito Line	
Center 709		m/ 10 MH	z			Span 30 MH	Z CF Step 3.000000 MHz <u>Auto</u> Man	Center 711		7 dBm/ 10	MHz				SI	pan 30 MHz	CF St 3.000000 M <u>Auto</u> M
Start Freq 5.015 MHz 5.150 MHz	5.150 MHz 30 15.00 MHz 10	0.00 kHz -3	Lower Bm ΔLim(dB) 81.84 (-18.84) 28.75 (-15.75)	<- F Freq (Hz) -5.026 M -5.150 M	dBm ∆Li -32.89 (-1	Upper m(dB) Freq (Hz) 19.89) 5.025 M 16.50) 5.150 M	Freq Offset 0 Hz	Start Freq 5.015 MHz 5.150 MHz	Stop Freq 5.150 MHz 15.00 MHz	Integ BW 30.00 kHz 100.0 kHz	dBm -30.99 -27.10	Lower ∆Lim(dB) (-17.99) (-14.10)	<ul> <li>Freq (Hz)</li> <li>-5.015 M</li> <li>-5.150 M</li> </ul>	Peak -> dBm -32.11 -28.43	Upper ∆Lim(dB) (-19.11) (-15.43)	Freq (Hz) 5.016 M 5.150 M	Freq Offs 0
3.515 MHz 4.000 MHz 8.000 MHz 12.50 MHz 12.50 MHz 12.50 MHz 12.50 MHz 12.50 MHz	8.000 MHz 1.0 12.50 MHz 1.0 15.00 MHz 1.0 15.00 MHz 1.0	0.00 kHz 000 MHz 000 MHz 000 MHz 000 MHz 000 MHz	() () () () ()		STATUS			3.515 MHz 4.000 MHz 8.000 MHz 12.50 MHz 12.50 MHz 12.50 MHz 12.50 MHz	4.000 MHz 8.000 MHz 12.50 MHz 15.00 MHz 15.00 MHz 15.00 MHz	30.00 kHz 1.000 MHz 1.000 MHz 1.000 MHz 1.000 MHz 1.000 MHz		() () () ()		   st	() () () () ()		
1	I TE B1	7 10M	IHZ OPS	KLOW		nel RB50-	 າ			317 10	MHz	OPS	K Hiał	n Cha	nnel I	R50-0	)

Page 206 of 597

# 9.2.7. LTE BAND 25 AND 5G NR n25 EMISSION MASK

## LIMITS

FCC: §24.238 (a)

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.

Page 207 of 597

### LTE BAND 25 EMISSION MASK



Page 208 of 597



Page 209 of 597



Page 210 of 597

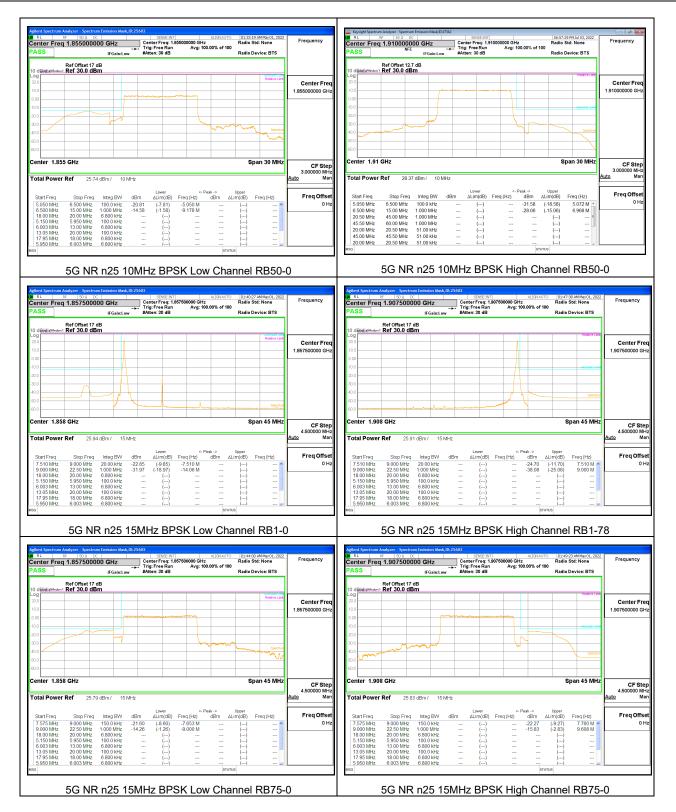


Page 211 of 597

### 5G NR n25 EMISSION MASK



Page 212 of 597



Page 213 of 597



Page 214 of 597



Page 215 of 597



Page 216 of 597

## 9.2.8. LTE BAND 26 EMISSION MASK (FCC PART 90S)

## <u>LIMITS</u>

FCC: §90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

NOTE: According to 971168 D02 Misc Rev Approv License Devices v02r01, Section VIII (c): For Section 90.691(a) compliance testing, use RBW = 300 Hz for offsets less than 37.5 kHz from a channel edge; RBW = 100 kHz for offsets greater than 37.5 kHz is allowed.

Page 217 of 597

### LTE BAND 26 EMISSION MASK



Page 218 of 597

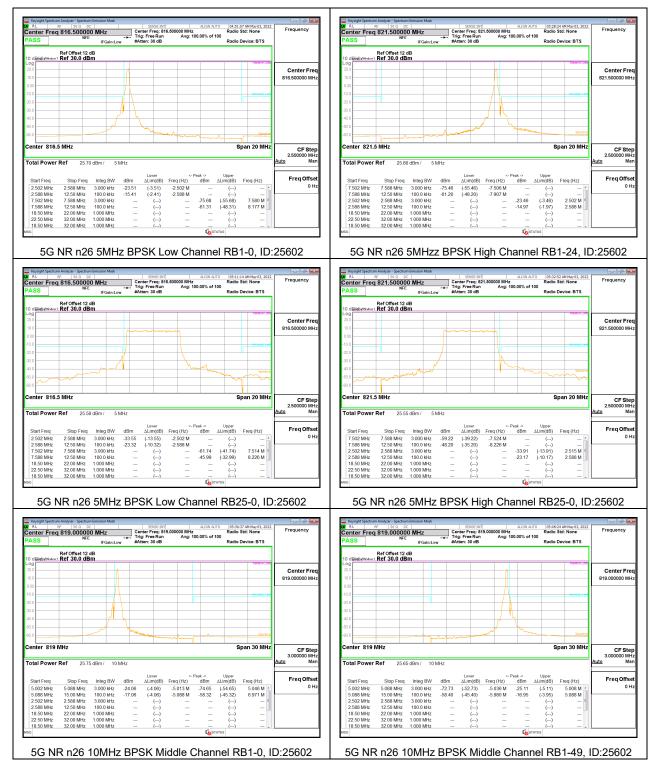


Page 219 of 597

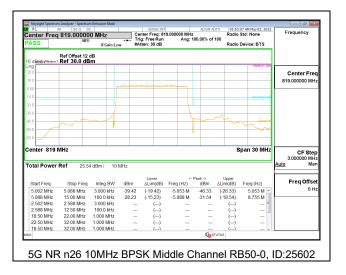


Page 220 of 597

### 5G NR n26 EMISSION MASK



Page 221 of 597



Page 222 of 597

## 9.2.9. LTE BAND 26 EMISSION MASK (FCC PART 22)

## LIMITS

FCC: §22.917 (a)

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  $43 + 10 \log (P) dB$ .

## LTE BAND 26 EMISSION MASK



Page 223 of 597