



HIGH BAND EDGE BLOCK-100M-100%RB

MultiView	Spectrum								
Ref Level 26. Att TDF "1"	00 dBm Offse 27 dB • SWT	t 8.20 dB ● RBV 3 s ● VBV	V 1 MHz V 5 MHz Mode	e Auto Sweep					
1 Frequency S	Sweep								O1Rm View
20 dBm								M1[1]	-26.66 dBm 2.693 020 GHz -
10 dBm									
0 dBm									
-10-dBm- limit1_for_trace1									
-20 dBm									
M1 -30 dBm		~							
-40 dBm		a d							
50 db			m						
-30 UBM									
-60 dBm									
-70 dBm-									
2.691 GHz	1		501 pts		1	1.9 MHz/			2.81 GHz
	~					7	Measuring		27.04.2022 15:08:13

15:08:14 27.04.2022





NR n71 OBW: 1RB-LOW_offset



16:43:36 27.04.2022

LOW BAND EDGE BLOCK-1RB-LOW_offset







NR n71 OBW: 1RB-HIGH_offset



16:45:02 27.04.2022

HIGH BAND EDGE BLOCK-1RB-HIGH_offset



16:45:44 27.04.2022





NR n71 LOW BAND EDGE BLOCK-20M-100%RB



HIGH BAND EDGE BLOCK-20M-100%RB



16:48:03 27.04.2022





NR n77L OBW: 1RB-LOW_offset



14:00:22 27.04.2022

LOW BAND EDGE BLOCK-1RB-LOW_offset



14:01:33 27.04.2022





LOW BAND EDGE BLOCK-1RB-LOW_offset



14:02:14 27.04.2022

NR n77L OBW: 1RB-HIGH_offset



14:02:56 27.04.2022





HIGH BAND EDGE BLOCK-1RB-HIGH_offset



14:04:19 27.04.2022

HIGH BAND EDGE BLOCK-1RB-HIGH_offset



14:05:13 27.04.2022





NR n77L LOW BAND EDGE BLOCK-90M-100%RB



LOW BAND EDGE BLOCK-90M-100%RB

MultiView	 Spectrum 								
Ref Level 26	.00 dBm Offse	t 8.80 dB 🖷 RB	W 500 kHz						_
Att	27 dB 🖷 SWT	3 s 👄 VB	W 3 MHz Mo	ode Auto Sweep					
DF "1" Frequency S	Sweep								o1Rm View
					Ĩ			M1[1]	-36.60 dBn
0 dBm							-	-3.	448 820 40 GH
0 dBm			8						
) dBm			-				_		
10 dBm									
nit1 for trace1								-	
20 dBm-									
30 dBm									MI
									minuture
40 dBm						-			
-50 dBm				-	-			-	
60 dBm									
-70 dBm			-						+
3 445 GHz			501 pts	1	L	100.0 kHz/	1	1	3 449 GH
0.110 0112	T.		001 pts			10010 10127			27.04.2021

14:07:14 27.04.2022





HIGH BAND EDGE BLOCK-90M-100%RB

MultiView	Spectrum								
Ref Level 26. Att TDF "1"	00 dBm Offse 27 dB • SWT	t 8.80 dB ● RBV 3 s ● VBV	V 200 kHz V 1 MHz Mo	de Auto Sweep					_
1 Frequency S	weep								01Rm View
20 dBm								M1[1] 3.5	-42.80 dBm 50 024 00 GHz-
10 dBm									
0 dBm									
-10 dBm									
limit1_for_trace1 -20 dBm									
20.40m									
-so delle									
-40 dBm		mumm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	······································	-M1. 				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
-50 dBm									
-60 dBm									
-70 dBm				S	1				S2
3.549 GHz		× · · · · ·	501 pts		20	0.0 kHz/			3.551 GHz
	-						Measuring		27.04.2022 14:08:18

14:08:19 27.04.2022

HIGH BAND EDGE BLOCK-90M-100%RB



14:08:59 27.04.2022





NR n77H OBW: 1RB-LOW_offset



14:18:01 27.04.2022

LOW BAND EDGE BLOCK-1RB-LOW_offset



14:19:07 27.04.2022





LOW BAND EDGE BLOCK-1RB-LOW_offset

MultiView	• Spectrum								
Ref Level 28. Att TDF "1"	00 dBm Offset 29 dB • SWT	t 8.80 dB ● RBV 3 s ● VBV	V 500 kHz V 3 MHz Mo	de Auto Sweep					
1 Frequency S	Sweep			4					01Rm View
								M1[1]	-30.34 dBm
20 dBm						:		3.6	98 996 00 GHz
10 dBm									
0 dBm									
-10 dBm									
limit1_for_trace1									
2052 (0.900)									M1
-30 dBm								man	- manufacture
-40 dBm							www	mun.	
-50 dBm									
-60 dBm									
-70 dBm-									
3.695 GHz			501 pts		40	0.0 kHz/		I	3.699 GHz
	-					-	Measuring		27.04.2022 14:19:47

14:19:47 27.04.2022

OBW: 1RB-HIGH_offset



14:11:52 27.04.2022





HIGH BAND EDGE BLOCK-1RB-HIGH_offset



14:12:33 27.04.2022

HIGH BAND EDGE BLOCK-1RB-HIGH_offset



14:13:13 27.04.2022





NR n77H LOW BAND EDGE BLOCK-100M-100%RB



14:21:08 27.04.2022

HIGH BAND EDGE BLOCK-100M-100%RB

MultiView Spectrum						
Ref Level 26.00 dBm Offset 8.8 Att 27 dB • SWT	0 dB ● RBW 500 kHz 3 s ● VBW 3 MHz Moo	de Auto Sweep				_
1 Frequency Sweep						●1Rm View
					M1[1]	-31.01 dBm
20 dBm						,980 020 0 GHz -
10 dBm-						
·····	mm					
0 dBm						
-10 dBm						
limit1 for trace1						
-20 dBm						
-30 dBm		mannen	And an	in the second state		
-40 dBm-						
-50 dBm						
-bu dBm						
-70 dBm		sı				52
3.975 GHz	501 pts		1.0 MHz/			3.985 GHz
				Measuring		27.04.2022 14:22:11

14:22:12 27.04.2022





LTE Band 12+NR n66 OBW: 1RB-LOW_offset



16:14:02 27.04.2022

LOW BAND EDGE BLOCK-1RB-LOW_offset



16:14:39 27.04.2022





OBW: 1RB-HIGH_offset



16:15:43 27.04.2022

HIGH BAND EDGE BLOCK-1RB-HIGH_offset



16:16:20 27.04.2022





LOW BAND EDGE BLOCK-40M-100%RB

MultiView	Spectrum							-
Ref Level 26. Att TDF "1"	00 dBm Offset 2 34 dB • SWT	.00 dB • RBW 500 kHz 3 s • VBW 3 MHz Mo	de Auto Sweep					
1 Frequency S	weep							O1Rm View
20 dBm							M1[1] 1	-16.79 dBm .710 000 0 GHz -
10 dBm								
0 dBm								
-10 dBm				<u> </u>				
-20 dBm				1				
-30 dBm								
-40 dBm								
-50 dBm								
-60 dBm								
s70 dBm			S	2				
CF 1.71 GHz	* *	501 pts		2	.0 MHz/			Span 20.0 MHz
	~					Measuring		27.04.2022 16:17:47

16:17:48 27.04.2022

HIGH BAND EDGE BLOCK-40M-100%RB



16:19:11 27.04.2022





A.7 Conducted Spurious Emission

A.7.1 Measurement Method

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

1. In measuring unwanted emissions, the spectrum shall be investigated from 30 MHz or the lowest radio frequency signal generated in the equipment, whichever is lower, without going below 9 kHz, up to at least the frequency given below:

(a) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(b) If the equipment operates at or above 10 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

- 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 greater than 2×span/RBW.

A. 7.2 Measurement Limit

Part 24.238 and Part 27.53(h) 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.

Part 27.53(m) 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 that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Part 27.53(g) states 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.

Part 27.53(n) states for mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at





least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. 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.

Part 27.53(I) states for mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (I)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either 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.





A. 7.3 Measurement result

n25

NOTE: peak above the limit line is the carrier frequency.



n41

NOTE: peak above the limit line is the carrier frequency.



15:10:11 27.04.2022





n71 NOTE: peak above the limit line is the carrier frequency.



n77L NOTE: peak above the limit line is the carrier frequency.



14:24:04 27.04.2022





n77H NOTE: peak above the limit line is the carrier frequency.



LTE Band 12+NR n66 NOTE: peak above the limit line is the carrier frequency.







A.8 Peak-to-Average Power Ratio

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB

a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;

b) Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;

- c) Set the number of counts to a value that stabilizes the measured CCDF curve;
- d) Record the maximum PAPR level associated with a probability of 0.1%.

Measurement results

n25,40MHz

Frequency (MHz)		PAPR (dB)											
Frequency (MHZ)	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM				
1882.5	4.80	4.98	6.04	6.34	6.42	7.76	7.72	7.56	8.32				

n41,100MHz

Frequency (MHz)		PAPR (dB)											
Frequency (MHZ)	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM				
2592.99	4.80	5.61	6.39	6.60	6.73	7.37	7.31	7.63	8.49				

n71,20MHz

Frequency (MHz)		PAPR (dB)											
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM				
680.5	3.94	4.94	5.90	6.04	6.62	6.78	6.74	7.30	8.46				

n77L,90MHz

Frequency (MHz)		PAPR (dB)											
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM				
3500.01	4.29	5.27	6.08	6.34	6.55	7.28	7.21	7.72	8.45				

n77H,100MHz

Frequency (MHz)		PAPR (dB)											
Frequency (MHZ)	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM				
3840	3.72	4.68	6.18	6.54	6.63	7.85	7.81	8.21	8.19				

LTE Band 12+NR n66,40MHz

Frequency (MHz)		PAPR (dB)											
	DFT-s-pi/2 BPSK	DFT-s-QPSK	DFT-s-16QAM	DFT-s-64QAM	DFT-s-256QAM	CP-QPSK	CP-16QAM	CP-64QAM	CP-256QAM				
1745	5.86	6.02	7.06	7.44	7.18	8.82	8.58	9.12	9.22				





Annex B: Accreditation Certificate



END OF REPORT