

APPENDIX H: RU SAR EXCLUSION

H.1 IEEE 802.11ax/be RU SAR Exclusion

To make the most efficient use of the additional available subcarriers (data tones), IEEE 802.11ax/be can utilize Orthogonal Frequency-Division Multiple Access (OFDMA) which divides the existing 802.11 channels into smaller subchannels called Resource Units (RUs). Possible RU sizes are: 26T, 52T, 106T, 242T, 484T, 996T, and 996Tx2 and for WIFI 6E additionally 996Tx4.

Per FCC Guidance, 802.11ax/be was considered a higher order 802.11 mode when compared to a/b/g/n/ac to apply KDB Publication 248227 D01v02r02 for OFDM mode selection. Therefore, SAR tests were not required for 802.11ax/be based on the maximum allowed output powers of OFDM modes and the reported SAR values. Per FCC Guidance, maximum conducted powers were performed for each RU size to demonstrate that the output powers would not be higher than the other OFDM 802.11 modes. Please refer to 1M2505130048-04, 06, 08 for IEEE 802.11ax/be RU powers.

H.2 IEEE 802.11ax/be RU Target Powers

H.2.1 2.4 GHz WLAN 802.11ax/be RU WLAN Output Power

The table below is applicable in the following conditions:

- Maximum Power

Band		IEEE 802.11ax/be RU (in dBm)											
		SISO Antenna WiFi 0 (in dBm)				SISO Antenna WiFi 1 (in dBm)				Antenna WiFi 0 & Antenna WiFi 1 in MIMO			
		26T	52T, 52T+26T	106T, 106T+26T	242T	26T	52T, 52T+26T	106T, 106T+26T	242T	26T	52T, 52T+26T	106T, 106T+26T	242T
2.45 GHz	Maximum	12	13	15	17	12	13	15	17	12	13	15	17
		ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0
	Nominal	11	12	14	16	11	12	14	16	11	12	14	16
		ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0

The table below is applicable in the following conditions:

- Grip

Band		IEEE 802.11ax/be RU (in dBm)											
		SISO Antenna WiFi 0 (in dBm)				SISO Antenna WiFi 1 (in dBm)				Antenna WiFi 0 & Antenna WiFi 1 in MIMO			
		26T	52T, 52T+26T	106T, 106T+26T	242T	26T	52T, 52T+26T	106T, 106T+26T	242T	26T	52T, 52T+26T	106T, 106T+26T	242T
2.45 GHz	Maximum	12	13	14	14	12	13	14	14	12	13	14	14
		ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0
	Nominal	11	12	13	13	11	12	13	13	11	12	13	13
		ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0

The table below is applicable in the following conditions:

- Simultaneous conditions with 5/6 GHz WLAN

Band		IEEE 802.11ax/be RU (in dBm)											
		SISO Antenna WiFi 0 (in dBm)				SISO Antenna WiFi 1 (in dBm)				Antenna WiFi 0 & Antenna WiFi 1 in MIMO			
		26T	52T, 52T+26T	106T, 106T+26T	242T	26T	52T, 52T+26T	106T, 106T+26T	242T	26T	52T, 52T+26T	106T, 106T+26T	242T
2.45 GHz	Maximum	12	12.5	12.5	12.5	12	12.5	12.5	12.5	12	12.5	12.5	12.5
		ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0	ch. 12: 9.0 ch. 13: 3.0
	Nominal	11	11.5	11.5	11.5	11	11.5	11.5	11.5	11	11.5	11.5	11.5
		ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0	ch. 12: 8.0 ch. 13: 2.0

FCC ID A3LSMX930	RF EXPOSURE PART 1 TEST REPORT	Approved by: Technical Manager
DUT Type: Portable Computing Device		APPENDIX H: Page 1 of 2

H.2.2 5 GHz WLAN 802.11ax/be RU WLAN Output Power

The table below is applicable in the following conditions:

- Maximum Power

Mode	IEEE 802.11ax/be RU (in dBm)																						
	SSB										SSB												
	Antenna WFI 0										Antenna WFI 1												
	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2		
5 GHz WFI (20MHz BW)	Maximum	10.0	13.0	15.0	15.0	15.0		10.0	13.0	15.0	15.0	15.0		10.0	13.0	15.0	15.0	15.0					
5 GHz WFI (20MHz BW)	Normal	8.0	12.0	14.0	14.0	14.0		8.0	12.0	14.0	14.0	14.0		8.0	12.0	14.0	14.0	14.0					
5 GHz WFI (40MHz BW)	Maximum	10.0	13.0	15.0	15.0	15.0		10.0	13.0	15.0	15.0	15.0	15.0		10.0	13.0	15.0	15.0	15.0				
5 GHz WFI (40MHz BW)	Normal	8.0	12.0	14.0	14.0	14.0		8.0	12.0	14.0	14.0	14.0	14.0		8.0	12.0	14.0	14.0	14.0				
5 GHz WFI (80MHz BW)	Maximum	10.0	13.0	15.0	15.0	15.0		10.0	13.0	15.0	15.0	15.0	15.0	15.0		10.0	13.0	15.0	15.0	15.0			
5 GHz WFI (80MHz BW)	Normal	9.0	12.0	14.0	14.0	14.0		9.0	12.0	14.0	14.0	14.0	14.0	14.0		9.0	12.0	14.0	14.0	14.0			
5 GHz WFI (160MHz BW)	Maximum	10.0	13.0	15.0	15.0	15.0		10.0	13.0	15.0	15.0	15.0	15.0	15.0	15.0		10.0	13.0	15.0	15.0	15.0		
5 GHz WFI (160MHz BW)	Normal	9.0	12.0	14.0	14.0	14.0		9.0	12.0	14.0	14.0	14.0	14.0	14.0	14.0		9.0	12.0	14.0	14.0	14.0		

The table below is applicable in the following conditions:

- Grip

Mode	IEEE 802.11ax/be RU (in dBm)																					
	SSB											SSB										
	Antenna WFI 0											Antenna WFI 1										
	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	
5 GHz WFI (20MHz BW)	Maximum	9.5	9.5	9.5	9.5		9.5	9.5	9.5	9.5				9.5	9.5	9.5	9.5					
	Normal	8.5	8.5	8.5	8.5		8.5	8.5	8.5	8.5				8.5	8.5	8.5	8.5					
5 GHz WFI (40MHz BW)	Maximum	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5		
	Normal	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5		
5 GHz WFI (80MHz BW)	Maximum	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5		
	Normal	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5		
5 GHz WFI (160MHz BW)	Maximum	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5		
	Normal	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5		

The table below is applicable in the following conditions:

- Simultaneous conditions with 2.4 GHz WLAN
- Simultaneous conditions with 2.4 GHz Bluetooth

Mode	IEEE 802.11ax/be RU (in dBm)																					
	SSB											SSB										
	Antenna WFI 0											Antenna WFI 1										
	Antenna WFI 0 & Antenna WFI 1 in MIMO																					
	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	
5 GHz WFI (20MHz BW)	Maximum	8.0	8.0	8.0	8.0			8.0	8.0	8.0	8.0				8.0	8.0	8.0	8.0				
5 GHz WFI (20MHz BW)	Normal	7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0				7.0	7.0	7.0	7.0				
5 GHz WFI (40MHz BW)	Maximum	8.0	8.0	8.0	8.0			8.0	8.0	8.0	8.0				8.0	8.0	8.0	8.0				
5 GHz WFI (40MHz BW)	Normal	7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0				7.0	7.0	7.0	7.0				
5 GHz WFI (80MHz BW)	Maximum	8.0	8.0	8.0	8.0			8.0	8.0	8.0	8.0				8.0	8.0	8.0	8.0				
5 GHz WFI (80MHz BW)	Normal	7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0				7.0	7.0	7.0	7.0				
5 GHz WFI (160MHz BW)	Maximum	8.0	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0			8.0	8.0	8.0	8.0	8.0			8.0	
5 GHz WFI (160MHz BW)	Normal	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0			7.0	7.0	7.0	7.0	7.0			7.0	

H.2.3 6 GHz WLAN Maximum 802.11ax/be RU WLAN Output Power

The table below is applicable in the following conditions:

- Maximum Power

Mode		IEEE 802.11ax/be RU (in dBm)																				
		SSB										SSB										
		Antenna WiFi 0										Antenna WiFi 1										
		26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2
6 GHz WFI (20MHz BW)	Maximum	1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0			
6 GHz WFI (20MHz BW)	Normal	0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0			
6 GHz WFI (40MHz BW)	Maximum	1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0			
6 GHz WFI (40MHz BW)	Normal	0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0			
6 GHz WFI (80MHz BW)	Maximum	1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0			
6 GHz WFI (80MHz BW)	Normal	0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0			
6 GHz WFI (160MHz BW)	Maximum	1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0			
6 GHz WFI (160MHz BW)	Normal	0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0			

The table below is applicable in the following conditions:

- Grip
- Simultaneous conditions with 2.4 GHz WLAN
- Simultaneous conditions with 2.4 GHz Bluetooth

Mode	IEEE 802.11ax/be RU (in dBm)																					
	SSB							SSB							Antenna WiFi 0 & Antenna WiFi 1 in MIMO							
	Antenna WiFi 0							Antenna WiFi 1														
	Antenna WiFi 0							Antenna WiFi 1														
	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	26T	52T, 52T+26T	104T, 104T+26T	242T	484T, 484T+242T	996T, 996T+484T, 996T+484T+242T	996T*2	
6 GHz WFI (20MHz BW)	Maximum	1.0	4.0	7.0	7.0			1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0				
6 GHz WFI (20MHz BW)	Normal	0.0	3.0	6.0	6.0			0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0				
6 GHz WFI (40MHz BW)	Maximum	1.0	4.0	7.0	7.0			1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0				
6 GHz WFI (40MHz BW)	Normal	0.0	3.0	6.0	6.0			0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0				
6 GHz WFI (80MHz BW)	Maximum	1.0	4.0	7.0	7.0			1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0				
6 GHz WFI (80MHz BW)	Normal	0.0	3.0	6.0	6.0			0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0				
6 GHz WFI (160MHz BW)	Maximum	1.0	4.0	7.0	7.0			1.0	4.0	7.0	7.0				1.0	4.0	7.0	7.0				
6 GHz WFI (160MHz BW)	Normal	0.0	3.0	6.0	6.0			0.0	3.0	6.0	6.0				0.0	3.0	6.0	6.0				

FCC ID A3LSMX930

RF EXPOSURE PART 1 TEST REPORT

Approved by:

Technical Manager

DUT Type:
Portable Computing Device

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