

MPE Calculation

KDB 447498 - 4.3.1 b)

b) For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):

- 1) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·(f(MHz)/150)]} mW, for 100 MHz to 1500 MHz
- 2) {[Power allowed at numeric threshold for 50 mm in step a)] + [(test separation distance – 50 mm)·10]} mW, for > 1500 MHz and ≤ 6 GHz

KDB 447498 - Appendix B

Frequency (MHz)	Distance (mm)	Distance (mm)
	60	70
1900	209	309
2450	196	296
3600	179	279

Model Name : **ERA 1 X**

FCC ID : **2A5D3-SP190**

Separation distance : **62.0 mm**

Modulation	Frequency (MHz)	Min. Test separation distance	Measured Maximum Average power	Tune-up tolerance	Max. Power with tune-up tolerance		SAR Test exclusion thresholds for 100MHz to 6GHz at test separation distance ≥ 50 mm	Limit	Result
		(mm)	(dBm)	(dB)	(dBm)	(mW)			
Bluetooth(QCC)	2402	62.00	16.19	± 1.00	17.19	52.36	121.3089	197.13	PASS
	2441		16.32		17.32	53.95	121.3595	196.21	PASS
	2480		16.47		17.47	55.85	121.4185	195.56	PASS
Bluetooth(Air oHa)	2402	62.00	6.61	± 1.00	7.61	5.77	120.1442	197.13	PASS
	2441		6.18		7.18	5.22	120.1316	196.21	PASS
	2480		5.56		6.56	4.53	120.1150	195.56	PASS
MESH	2410	62.00	16.51	± 1.00	17.51	56.36	121.4113	196.95	PASS
	2445		15.65		16.65	46.24	121.1661	196.12	PASS
	2475		14.82		15.82	38.19	120.9692	195.63	PASS

KDB 447498 - 4.3.2 b)

When an antenna qualifies for the standalone SAR test exclusion of 4.3.1 and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to the following to determine the simultaneous transmission SAR test exclusion criteria:

- 1) [(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)]·[√f(GHz)/x] W/kg, for test separation distances ≤ 50 mm;

where x = 7.5 for 1-g SAR and x = 18.75 for 10-g SAR.

- 2) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distance is > 50 mm.

Modulation	Frequency (MHz)	Min. Test separation distance	Max. Power with tune-up tolerance		Simultaneous transmission SAR Test exclusion thresholds for 100MHz to 6GHz at test separation distance > 50 mm (x=7.5)	Limit	Result
		(mm)	(dBm)	(mW)			
Bluetooth(QCC)	2480	62.00	17.47	55.85	0.3994	0.40	PASS
Bluetooth(Air oHa)	2480	62.00	7.61	5.77			
MESH	2475	62.00	17.51	56.36			