



June 19th 2017

Edge Computing Gateway – EC3331

FCC ID: QQD-EC331

IC:5248S-EC3331

Flex attests to the following exclusions for the assessment of the device FCC ID: **QQD-EC3331, IC: 5248S-EC3331**, regarding the additional transmit modes for simultaneous transmissions.

Based on the measurement standards and FCC KDB test references listed below, additional SAR testing was excluded from the assessment based on the General SAR Exclusion Guidance Document KDB 447498 D01 v06, para. 4.3.1.

Measurement data from certification reports provided by Dekra (at4 Wireless).

- 1) Frequency Exclusion (less than 30MHz)
IEC 62209-2:2010 Human exposure to RF fields from hand-held and body-mounted wireless devices - Human models, instrumentation, and procedures - Part 2: specific absorption rate (SAR) for wireless communication devices (30 MHz - 6 GHz)
Near Field Communication Radio (NFC) – NXP - PN7120
Transmit Frequency: 13.56 MHz
Peak Transmitter Power: 47.07dBuV/m@3m (-50.33dBm erp).
- 2) Low Power Exclusion (less than 10mW combined with antenna gain)
OET Laboratory Division FCC KDB 447498 Mobile and Portable Device RF Exposure Equipment Authorization Procedures
Bluetooth 4.0/BLE Radio
Transmit frequency: 2400-2483.5 MHz
Transmit Power: +7.0dBm (0.00501W)
Max. Antenna Gain: +2.3dBi (0.0017W)
- 3) Low Power Exclusion (less than 16mW combined with antenna gain)
OET Laboratory Division FCC KDB 447498 Mobile and Portable Device RF Exposure Equipment Authorization Procedures
Z-Wave, Sigma Designs, ZM5202
Transmit frequency: 865.2-926.3 MHz
Transmit Power: 91.65dBuV/m@3m (-5.75dBm erp)



KDB 447498 General RF Exposure Guidance v06

Appendix A

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in 4.3.1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	<i>SAR Test Exclusion Threshold (mW)</i>
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

Compliance Calculations:

Frequency (MHz)	Peak Field Strength (dBuV/m)	Peak output Power (dBm)	Peak output Power (mW)	Evaluation Distance Per KDB 447498 D01 General RF Exposure Guidance V06 – 4.3.1 (mm)	[(max . power of channel, including tune-up tolerance, mW)/(min. separation distance, mm.)]* (Vf(GHz))		SAR Test Exclusion Thresholds per DB 447496 D01 General RF Exposure Guidance v06 – 4.3.1
13.56	47.07	-50.33	0.0000092683	5	0.000000216	<3	Compliant
900	91.65	-5.75	0.26607	5	0.0505	<3	Compliant
*2400	-----	9.3	8.511	5	2.637	<3	Compliant

*

- This device can only transmit on one 2.4 GHz radio at any one time. Both Bluetooth and Wi-Fi radio's share the same antenna.
- SAR was evaluated for the 2.4 GHz Wi-Fi radio as this represent worsts case transmit power in the 2.4 GHz band (Worst-case Wi-Fi conducted transmit power = 19.18dBm)
- Data presented in the table above for the 2.4GHz band is for reference only, as it has already been evaluated in the SAR report.



It is the conclusion of Flex that simultaneous assessment for the above named transmit modes is not required as part of this analysis due to the low power and frequency exclusions.

Regards, Steve Tippet

A handwritten signature in blue ink, appearing to read "Steve Tippet", with a stylized, scribbled end.

Senior Manager – Product Integrity