



RF EXPOSURE ANALISYS

Sample Identification:

Products: Digital controller with advanced energy saving management and Bluetooth connectivity mod. XR77CHC 16+16+7+5A 110V

FCC ID: ZG501XRCHC

Nominal frequencies : 2402 MHz
2439 MHz
2479 MHz

Module Identification

Frequency Range (MHz): 2400 – 2483,5

Nominal conducted power level: 2,20 ± 1,30 dBm

Maximum conducted power level: 3,50 dBm (2,24 mW)

Analysis:

Standalone SAR test exclusion considerations are defined in the KDB 447498 chapter 4.3.1 "At 100 MHz to 6 GHz and for test separation distances ≤ 50 mm", head or body SAR exclusion threshold is defined with formula

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. separation distance, mm})] \times (\sqrt{f(\text{GHz})}) \leq 3 \text{ for 1-g SAR.}$$

Using separation distance of 5 mm with the formula above results:

$$(2,24 \text{ mW} / 5 \text{ mm}) * \sqrt{2,45 \text{ GHz}} = 0,70 \leq 3$$

Thus for portable use the SAR exclusion condition is fulfilled and SAR evaluation is not required for separation distance of 5 mm or more



In addition, as marked in the below table (KDB 447498 D01 V06 Annex A), for EUT operating at 2450 MHz the SAR Test Exclusion Threshold is 10 mW at 5 mm separation distance.
The maximum conducted power level of EUT is 2,24 mW.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
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	

The SAR exclusion condition is fulfilled and SAR evaluation is not required.

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Ing. Renzo Beghetto
(Laboratory Manager)