

Robert Bosch
Car Multimedia GmbH
Attn. Mr. Torsten Sahm
Robert-Bosch-Strasse 200
31139 Hildesheim
Germany

Markus Bauks
28.01.2015
Phone +49 (0) 2102 749 332
Fax +49 (0) 2102 749 350

Maximum Permissible Exposure

PRSE

Dear Mr. Torsten Sahm,

please find our Maximum Permissible Exposure calculations for the PRSE.

Best Regards

A handwritten signature in blue ink that reads 'i. A. M. Bauks'.

Markus Bauks

Maximum Permissible Exposure

(as specified in Table 1B of 47 CFR 1.1310 – Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure)

Frequency range (MHz)	Power density (mW/cm ²)
300 – 1500	f/1500
1,500 – 100000	1.0

Calculations 2.4 GHZ

SAR Limit: 1 mW/cm²

Equation OET bulletin 65, page 18, edition 97-01: $S = P \cdot G / (4\pi R^2)$

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

Operational Bands	Frequency (MHz)	Antenna Gain (dBi)	G		P		S	
			Antenna Gain -numeric- (mW/cm ²)	Output Power -conducted- (dBm)	Output Power -conducted- (mW)	Limit (mW/cm ²)	Power Density value (mW/cm ²)	Margin to Limit (mW/cm ²)
WLAN - 802.11b (20 MHz)	2462	2,5	1,7783	18,70	74,13	1,0000	0,0262	0,9738
WLAN - 802.11g (20 MHz)	2437	2,5	1,7783	21,50	141,25	1,0000	0,0500	0,9500
WLAN - 802.11n (20 MHz)	2462	2,5	1,7783	20,80	120,23	1,0000	0,0425	0,9575
Bluetooth (8-DPSK)	2441	1,6	1,4454	2,34	1,71	1,0000	0,0005	0,9995

Distance to Antenna (R) in cm:	20
--------------------------------	----

Note 1: only worst case values are listed in the table above

Note 2: the duty cycle correction factor is already included in the measurement values