SAR ATTESTATION

KDB 447498 D01 General RF Exposure Guidance v05r02 (February 7, 2014)

1. Declaration of RF exposure compliance for exemption from routine evaluation limits

Applicant:	Hella Gutmann Solutions GmbH Am Krebsbach 2 79241 Ihringen Germany	
Nemko ident. no.:	303865	
Number of pages:	3	
Name of host device:	mega macs 42 SE	
Transmitter #:	1	2
FCC ID:	2AEOK-HGS2	2AEOK-HGS2
Model number:	WT41-A	WT41-A
Manufacturer of the radio module:	Bluegiga Technologies Oy Sinikalliontie 5A 02630 ESPOO FINLAND	Bluegiga Technologies Oy Sinikalliontie 5A 02630 ESPOO FINLAND
Exposure Conditions:	The mega macs 42 SE is a communication interface between a vehicle and a mechanic working in a garage. It is designed and intended for use on extremities or mainly operated in extremity only. A body-worn use is not intended. There are no accessories such as shoulder bags or carrying straps. A typical use case is shown in Annex B. Therefore the product is considered to require *extremity SAR evaluation*.	
4.3.2. Simultaneous transmission SAR test exclusion considerations:	The standalone SAR test exclusion of section 4.3.1 is applied to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to the following to determine simultaneous transmission SAR test exclusion: • [(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, where f(GHz) is the RF channel transmit frequency in GHz Power and distance are rounded to the nearest mW and mm before calculation The result is rounded to one decimal place for comparison The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz.	
	Calculation based on the above formula: Separation Distance = 31 mm; Frequency = 2.480 GHz Conducted Output Power = 41 mW Tune-up tolerance = +2dB (factor 1.6) Calculation: $\frac{41 * 1.6}{31} * \frac{\sqrt{2.480}}{18.75} \approx 0.18 \frac{W}{kg}$	Calculation based on the above formula: Separation Distance = 31 mm; Frequency = 2.480 GHz Conducted Output Power = 41 mW Tune-up tolerance = +2dB (factor 1.6) Calculation: $\frac{41 * 1.6}{31} * \frac{\sqrt{2.480}}{18.75} \approx 0.18 \frac{W}{kg}$
	Sum of all simultaneously transmitting antennas: $0.18 \frac{W}{kg} + 0.18 \frac{W}{kg} = 0.36 \frac{W}{kg} \leq 4 \frac{W}{kg}$ The calculation is below the threshold, therefore the product is exempt from the SAR test requirements.	

2. Attestation

ATTESTATION: I attest that the testing was performed by a FCC listed test laboratory, that the test measurements were made in accordance with the above-mentioned departmental standard(s), and that the radio equipment identified in this application has been subject to all applicable test conditions specified in the departmental standards and all of the requirements of the standards have been met.

Signature:	
Date:	June 10, 2016
Name:	Markus Korny, EMC Specialist

Annex A

The physical dimensions of the mega macs 42 are 47 x 110 x 202 mm (H x W x L).
Test separation distance of antenna 1 is determined by the closest separation between the antenna and the user.
The host device will be held on the smaller part of the enclosure used as a handle. The separation distance is calculated to the outside of the enclosure on the wider part of the host device, where it is not held (see Figure 1, 2).
Between the second antenna and the handle there is a greater distance to the user.
For a conservative consideration, the shorter distance from antenna 1 is used to calculate the exposure from the antenna 2.

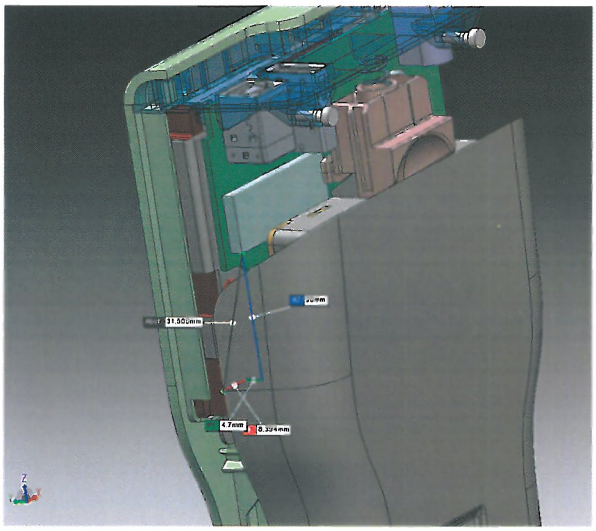

Figure 1

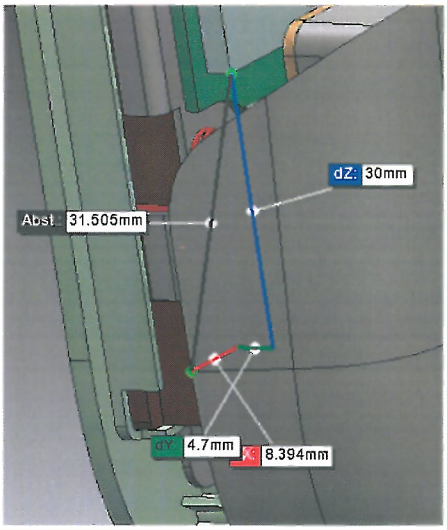

Figure 2

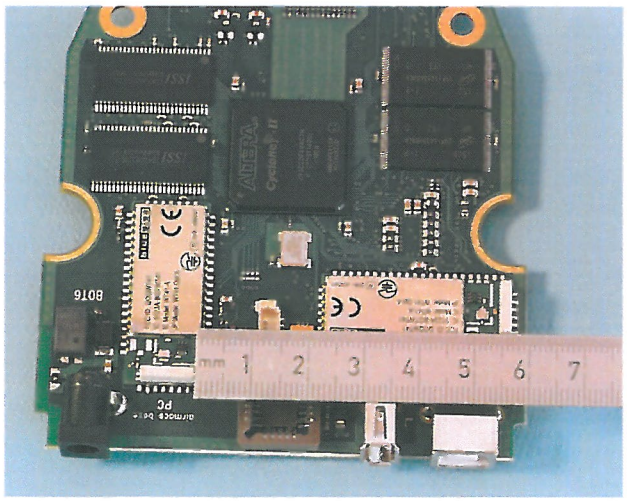

Figure 3 shows the distance between the two antennas.

Figure 4

Annex B

Figure 5 shows a typical use case.