RF Exposure Calculation

Applicant: Höft & Wessel AG
FCC ID: PGM860505

The module is only approved for use when installed in devices produced by the Grantee**.** The internal / external antenna(s) shown in this filing used for this mobile transmitter must provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

End users may not be provided with the module installation instructions. OEM integrators and Professional end users must be provided with transmitter operating conditions for satisfying RF exposure compliance.

For portable applications OEM integrators need SAR evaluation and an own FCC ID.

Antenna requirement § 15.203).
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. Installers must provide with antenna installation instructions and transmitter operating conditions for satisfying RF. The Embedded WLAN radio module HW 86050 may be operated only with the antenna with which it is authorized. A broken antenna is changed only by the Professional Installer.

The Following calculation is the reference data for 20cm distance.

name			nature value	log value
max conducted power			71,94 mW	18,57 dBm
max Antenna gain dBi			1,58	2,00 dBi
calculated radiated power		EIRP	114,0250 mW	20,57 dBm
duty cycle factor				
frequency	2400 MHz			
dwell time			100,00 ms	
Time of occupancy/puls-train time			100,00 ms	
duty cycle factor	10log(dwell time/100 ms)		**100,00%**	0,00 dB
max source-based time-averaged power				
conducted power			**71,94** mW	18,57 dB
calculated radiated power		EIRP	**114,02** mW	20,57 dB

M P E

$$S = \frac{PG}{4\pi R^2}$$

calculated with max source-based time-averaged power
measured condacted power

r [cm]	20	2,5	1,5	**3,013**
S [mW/cm²]	**0,0227**			1,0
Limit general population	[mW/cm²]	1,0		
Limit occupational population	[mW/cm²]	5,0	for f = 2400 MHz	

$$S = \frac{EIRP}{4\pi R^2} = \frac{1.64\ ERP}{4\pi R^2} = \frac{0.41\ ERP}{\pi R^2}$$

calculated with max source-based time-averaged power
measured radiated power

r [cm]	20	2,5	1,5	**n.a.**
S [mW/cm²]	**n.a.**			1,0