ELECTRONIC TECHNOLOGY SYSTEMS DR.GENZ GMBH

®

RF Exposure Calculation

Applicant: MSA AUER GmbH
FCC ID: RPN-10069330

The module is only approved for use when installed in devices produced by the MSA Auer GmbH**.** The antenna shown in this filing must not be co-located or operated 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. The LRR Module US non expotted has an antenna connector and two tested/approved external antennas for external use (refer Test report). Installers must provide with antenna installation instructions and transmitter operating conditions for satisfying RF. The LSS module may be operated only with the antenna with which it is authorized. The LRR module 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		424,62 mW	26,28 dBm
max Antenna gain dBi		2,04	3,10 dBi
max Antenna gain dBd		1,24	0,95 dBd
calculated radiated powe	ERP	528,64 mW	27,23 dBm
measured radiated powe	ERP	632,41 mW	28,01 dBm
duty cycle factor			
frequency	915 MHz		
dwell time		40 ms	
Time of occupancy/puls-train time		100 ms	
duty cycle fact 10log(dwell time/100 ms)		**40,00%**	-3,98 dB
max source-based time-averaged power			
conducted power		**169,85** mW	22,30 dB
calculated radiated power	ERP	**211,45** mW	23,25 dB
measured radiated power	ERP	**252,96** mW	24,03 dB

M P E					
$S = \dfrac{PG}{4\pi R^2}$	calculated with max source-based time-averaged power measured condacted power				
	r [cm]	20	2,5	1,5	
	S [mW/cm²]	**0,069**			0,557
Limit general population [mW/cm²]		0,557			
Limit occupational popul [mW/cm²]		2,79	for f =	915 MHz	
$S = \dfrac{EIRP}{4\pi R^2} = \dfrac{1.64\, ERP}{4\pi R^2} = \dfrac{0.41\, ERP}{\pi R^2}$	calculated with max source-based time-averaged power measured radiated power				
	r [cm]	20	2,5	1,5	
	S [mW/cm²]	**0,083**			1