CAEN RFID srl
Via Vetraia, 11 - 55049 Viareggio (LU) - Italy
tel. +39.0584.388.398 - fax +39.0584.388.959
info@rfid.caen.it - www.rfid.caen.it

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Object: RF exposure info for R4301P - ION - RFID UHF Portal Reader,
             R4301PXGPRS - ION - RFID UHF Portal reader with GPRS and
             R4301PXWIFI - ION - RFID UHF Portal reader with WIFI
FCC ID: UVECAENRFID022

Prediction of Maximum Permissible Exposure (MPE) limit at a given distance has been performed according to Prediction Methods described in Section 2 of OET Bulletin 65, Edition 97-01.

$$\frac{P \cdot G}{4 \cdot \pi \cdot R^2}$$

Where: S = power density (in appropriate units, e.g. mW/cm2)
P = power input to the antenna (in appropriate units, e.g. mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g. cm)

MPE limit has been calculated according to General Population/Uncontrolled rules.
The calculation assumes that RFID antennas and GPRS / WIFI antenna are installed at 20cm distance at least from each other.

   1) RFID ANTENNA

Frequency (MHz)	902
MPE limit (mW/cm^2)	0.60
Maximum conducted power (mW)[1]	560
Maximum conducted power (dBm)	27.48
Antenna gain (dBic)	8.5
Maximum EIRP (dBm)	35.98
Maximum EIRP (mW)	3965
Prediction distance (cm)	25
Maximum power density at prediction distance (mW/cm^2)	0.505

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1 RF power up to 1000mW can be set in order to compensate antenna cable loss. For the calculation 0dB loss has been considered and the conducted power level corresponds to 36dBm EIRP radiated power with the approved antenna.

2) GPRS ANTENNA – GSM 850 Band (R4301PXGPRS version only)

Frequency (MHz)	824
MPE limit (mW/cm^2)	0.55
Maximum conducted power (mW)	2000
Maximum conducted power (dBm)	33.0
Antenna gain (dBi)	1
Maximum EIRP (dBm)	34.0
Maximum EIRP (mW)	2518
Prediction distance (cm)	20
Maximum power density at prediction distance (mW/cm^2)	0.501

3) GPRS ANTENNA – PCS1900 Band (R4301PXGPRS version only)

Frequency (MHz)	1850
MPE limit (mW/cm^2)	1.00
Maximum conducted power (mW)	1000
Maximum conducted power (dBm)	30.0
Antenna gain (dBi)	1
Maximum EIRP (dBm)	31.0
Maximum EIRP (mW)	1259
Prediction distance (cm)	20
Maximum power density at prediction distance (mW/cm^2)	0.250

4) WIFI ANTENNA (R4301PXWIFI version only)

Frequency (MHz)	2412
MPE limit (mW/cm^2)	1.00
Maximum conducted power (mW)	100
Maximum conducted power (dBm)	20.00
Antenna gain (dBi)	2.0
Maximum EIRP (dBm)	22.00
Maximum EIRP (mW)	158.5
Prediction distance (cm)	20
Maximum power density at prediction distance (mW/cm^2)	0.032