



Maximum Permissible Exposure (MPE) & Exposure evaluation

Report identification number: 1-3692/21-03-05 MPE (FCC)

Certification numbers and labeling requirements	
FCC ID	2AJRSIRTTRU

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Document authorised:



Alexander Hnatovskiy
Lab Manager
Radio Communications & EMC



Marco Scigliano
Testing Manager
Radio Communications & EMC

EUT technologies:

Technologies:	Max. power [dBm]		Antenna gain max.: [dBi] **
	conducted	EIRP	
RFID 13.56 MHz	< 30 dBm	--	--

NOTE:

Information taken from Datasheet **2022-03_indurad_iRTT-RU_en_V22gn.pdf**

Prediction of MPE limit at given distance - FCC

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG / 4\pi R^2$$

where: S = Power density
 P = Power input to the antenna
 G = Antenna gain
 R = Distance to the center of radiation of the antenna
 PG = Output Power including antenna gain

The table below is excerpted from Table 1B of 47 CFR 1.1310 titled "Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure"

According to: CFR47, Subpart I - §1.1310 Radiofrequency radiation exposure limits				
Frequency Range (MHz)	Electric Field (V/m)	Magnetic Field (A/m)	Power density (mW/cm²)	Averaging time (minutes)
Occupational / Controlled Exposure				
0.3-3.0	614	1.63	100	6
3.0-30	1842/f	4.89/ f	900/f ²	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100000	--	--	5	6
General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	100	30
1.34-30	824/f	2.19/f	180/f²	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100000	--	--	1.0	30

where f = Frequency (MHz)

Prediction: worst case

Technologies:		RFID	
	Frequency (MHz)	13.56	
PG	Declared max power (EIRP)	30	dBm
R	Distance	20	cm
S	MPE limit for uncontrolled exposure	0.97	mW/cm ²
	Calculated Power density:	0.1990	mW/cm ²
	Calculated percentage of Limit:	20.52%	

This prediction demonstrates the following:

The power density levels for FCC at a distance of 20 cm are below the maximum levels allowed by regulations.