

Maximum Permissible Exposure (MPE) & Exposure evaluation

Report identification number: 1-0371/15-01-04

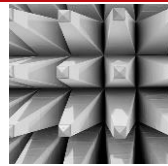
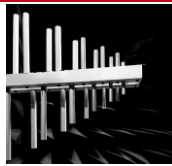
Certification numbers and labeling requirements	
FCC ID	UOU68635RFP36U-01
IC number	1884E-68635001
HVIN (Hardware Version Identification Number)	RFP 37 DRC
PMN (Product Marketing Name)	RFP 37 DRC
FVIN (Firmware Version Identification Number)	-/-
HMN (Host Marketing Name)	-/-

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EUT technologies:

Technologies:	Max. power: (AVG)	Max. gain:	Min. pathloss:
DECT/UPCS at 1920-1930 MHz	18.3 dBm)*	8 dBi)**	0 dB (if applicable)

)* theoretical full timeslot allocation assumed

)** Huber+Suhner Sencity Antenna SPA-1900/70/8/0/RCP

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

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"

Frequency Range (MHz)	Power Density (mW/cm ²)	Averaging Time (minutes)
300 -1500	f/1500	30
1500 - 100000	1.0	30

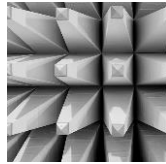
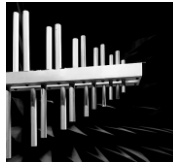
where f = Frequency (MHz)

Prediction: worst case

		> 1500 MHz
	Technology	DECT/UPCS
P	Max power input to the antenna	18.3 dBm
R	Distance	20 cm
G	Antenna gain	8 dBi
S	MPE limit for uncontrolled exposure	1 mW/cm ²
	Calculated Power density:	0.085 mW/cm²

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.



Prediction of MPE limit at given distance - IC

RSS-102, Issue 5, 2.5.2

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

The following RF field strength limits for devices used by the general public (uncontrolled environment) have been applied according to table 4 of RSS-102:

Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m ²)	Reference Period (minutes)
0.003-10	83	90	-	Instantaneous*
0.1-10	-	$0.73/f$	-	6**
1.1-10	$87/f^{0.5}$	-	-	6**
10-20	27.46	0.0728	2	6
20-48	$58.07/f^{0.25}$	$0.1540/f^{0.25}$	$8.944/f^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	$3.142 f^{0.3417}$	$0.008335 f^{0.3417}$	$0.02619 f^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	$616000/f^{1.2}$
150000-300000	$0.158 f^{0.5}$	$4.21 \times 10^{-4} f^{0.5}$	$6.67 \times 10^{-5} f$	$616000/f^{1.2}$

Note: f is frequency in MHz.

*Based on nerve stimulation (NS). ** Based on specific absorption rate (SAR).

Prediction: worst case

	Technology	DECT/UPCS at 1920 – 1930 MHz
P	Max power input to the antenna	18.3 dBm
R	Distance	20 cm
G	Antenna gain	8 dBi
S	MPE limit for uncontrolled exposure)*	4.59 W/m ²
	Calculated Power density:	0.85 W/m²

)* calculated for 1920 MHz

This prediction demonstrates the following:

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