

## Maximum Permissible Exposure (MPE) & Exposure evaluation

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Certification numbers and labeling requirements	
FCC ID	OSDUNITEAP4
IC number	3628C-UNITEAP4
HVIN (Hardware Version Identification Number)	Unite AP4
PMN (Product Marketing Name)	Unite AP4
FVIN (Firmware Version Identification Number)	-/-
HMN (Host Marketing Name)	-/-

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**EUT technologies:**

Technologies:	Max. power conducted:	Max. antenna gain:	Min. pathloss:
DECT 1920 MHz	Measured: 15.6 dBm (slotted) Rated max.: 23 dBm (slotted) Rated avg.: 20 dBm (12 of 24 slots active)	Measured : 1.7 dBi	-- (if applicable)

**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"

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

where f = Frequency (MHz)

Prediction: worst case

	Technology	DECT
	Frequency	1920 MHz
P	Declared max power input to the antenna	20 dBm
R	Distance	20 cm
G	Antenna gain	1.7 dBi
S	MPE limit for uncontrolled exposure	1.0000 mW/cm <sup>2</sup>
	<b>Calculated Power density:</b>	0.0294 mW/cm <sup>2</sup>
	<b>Calculated percentage of limit:</b>	2.94%

**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).

Prediction: worst case

		0.3 - 6 GHz	
	Frequency	1920	MHz
R	Distance	20	cm
P	Max power input to the antenna	20	dBm
G	Antenna gain	1.7	dBi
PG	Maximum EIRP	21.7	dBm
PG	<b>Maximum EIRP</b>	147.9	mW
	<b>Exclusion Limit from above:</b>	2.30	W
	<b>Calculated percentage of Limit:</b>	6.44%	

**Conclusion:** RF exposure evaluation is not required.

For applications where minimum distance to radiating element is 20cm Annex C of RSS-102 should be filled out.