

6.13 Safety exposure levels

6.13.1 Standard Applicable: FCC 15.319(i)

UPCS devices are subject to the radio frequency radiation exposure requirements specified in FCC parts 1.1307 (b), 2.1091 and 2.1093, as appropriate. All equipment shall be considered to operate in a "general population / uncontrolled environment. For portable devices tests according to IEEE 1528 are requested, if applicable.

6.13.2 Measurement procedure

Consideration of radio frequency radiation exposure for EUT is done as

SAR test according OET65c (for PP)	☐
MPE calculation as below (for FP, Repeater)	☒

SAR test results: See SAR test report.

MPE calculation: not applicable

The EUT is considered as a mobile device according to OET Bulletin 65, Edition -97-01. Therefore distance to human body of min. 20 cm is determined.

The limit of Power density for General Population / Uncontrolled Exposure is 1.0 mW/cm².

Formula:

$$S = \text{EIRP} / 4\pi R^2$$

Calculation:

Modulation Type		DECT	ZigBee
EIRP	Radiated Power (dBm)	9.51	-0.98
EIRP	Radiated Power (mW)	8.933	0.798
R	Distance (cm)	20	20
S	Power Density (mW/cm ²)	0.00178	0.000131

Simultaneous Evaluation:

ZigBee 2.4GHz and DECT radio can transmit simultaneously.

The formula of calculated MPE is:

$$\text{CPD1/LPD1} + \text{CPD2/LPD2} + \dots \text{etc.} < 1$$

CPD=Calculated Power Density

LPD=Limit of Power Density

Radio Technology	Worse CPD (mW/cm ²)
ZigBee	0.000131
DECT	0.00557

The MPE evaluation is $0.000131/1 + 0.00557/1 = 0.0057 < 1$, which confirm the device comply the MPE limit.

6.13.3 Results : Complies