Radio frequency radiation exposure, FCC 15.319 (i)

Document No. : VO028524 DECT M7 MPE calculation_FCC

For customer project : **VO028524 DECT M7**

Device under Test Model Name : CT-DECT M7 Module FCC ID : L52CT-M7CEO1
Customer **CeoTronics AG** FCC Registration Number (FRN Number): 0005-8988-95 63322 Roedermark Adam-Opel Strasse 6 Germany

Device description : CT-DECT M7 Module

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. Consideration of radio frequency radiation exposure for EUT is done as MPE calculation as shown below.

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

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The internal antennas used for this mobile transmitter must provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance wit the FCC multitransmitter policy.

A safety statement concerning the minimum separation distances from enclosure of the device will be integrated in the user´s manual to provide end-users with transmitter operating conditions for satisfying RF exposure compliance.

Calculation :

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

EIRP calculation based on max permitted conducted peak power = 20.2 dBm
EIRP for antenna 1 (gain 3.5dBi) : 23.7 dBm
EIRP for antenna 2 (gain 1.5dBi) : 21.7 dBm

For calculation of S only the higher value for antenna 1 will be considered :

EIRP	Radiated power [dBm]	23.7
EIRP	Radiated power [mW]	234.42
R	Distance [cm]	20
S calculated	Power density [mW/cm^2]	0.0467
Limit USA *	Limit [mW/cm^2]	1.0

* The limit is taken from 47 CFR Ch. I (e-CFR November 9, 2020)
Table 1 to §1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE).
(ii) Limits for General Population/Uncontrolled Exposure
1,500-100,000 MHz

The calculated value is well below the limit.

Verdict : Pass

2020-05-19
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