

Analysis Report

The DM111 PU (35-201957PU) is an Audio Baby Monitor - Parent Unit.

The Equipment Under Test (EUT) operates at frequency range of 902MHz-928MHz. There are totally 62 non-overlapping channels with 400kHz channel separation and 25 active channels out of the 62 channels.

The EUT is powered by an AC adaptor (Model: VT05UUS06040, Input 100-120VAC 60Hz 0.15A, Output 6VDC 0.4A).

Duty Cycle of PU is $0.84/20\text{ms} \times 100\% = 4.2\%$

Antenna Type: Internal integral antenna

Antenna Gain: 0dBi

Nominal rated conducted power: 17.9dBm

Maximum conducted power of production tolerance: 20dBm

According to the KDB 447498 D04 (11/29/2021):

Based on the Maximum conducted power of production tolerance was 20dBm.

The EIRP = $[(FS \cdot D)^2 \cdot 1000 / 30] = 100\text{mW}$

The Maximum conducted Power source-based time-averaging output power

= $(100 \times 0.042) \text{ mW}$

= 4.2 mW

The SAR Exclusion Threshold Level:

For mobile devices that are not exempt per Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than $ERP_{20\text{cm}}$ in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{\text{th}} (\text{mW}) = ERP_{20\text{ cm}} (\text{mW}) = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B. 1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole.

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$$P_{\text{th}} (\text{mW}) = \begin{cases} ERP_{20\text{ cm}} (d/20\text{ cm})^x & d \leq 20\text{ cm} \\ ERP_{20\text{ cm}} & 20\text{ cm} < d \leq 40\text{ cm} \end{cases} \quad (\text{B. 2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20\text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
	5	10	15	20	25	30	35	40	45	50	
	300	39	65	88	110	129	148	166	184	201	217
	450	22	44	67	89	112	135	158	180	203	226
	835	9	25	44	66	90	116	145	175	207	240
	1900	3	12	26	44	66	92	122	157	195	236
	2450	3	10	22	38	59	83	111	143	179	219
	3600	2	8	18	32	49	71	96	125	158	195
	5800	1	6	14	25	40	58	80	106	136	169

Through the above calculation, 902 – 928MHz, the SAR Exclusion Threshold Level is 7.97mW @5mm.

Conclusion

Since the calculated conducted source-based time-averaged output power is 4.2 mW, which is less than the SAR Exclusion Threshold at 5mm test separation distance 7.97 mW for general population and uncontrolled exposure, standalone SAR evaluation for general population exposure conditions, by measurement or numerical simulation is not required.