

Karlskoga 2018-08-09

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RF Exposure information for: Smart Box Link with FCC ID 2A0FP-200612

The requirements for determination of compliance and the preparation of an Environmental Assessment regarding human exposure to levels of radiofrequency radiation, regulated in 47 CFR Part 2.1091 and 47 CFR 1.1310 for mobile devices RF Exposure Calculations:

The following information provides the minimum separation distance for the highest gain antenna provided with the Smart Box Link as calculated from (B) Limits for General Population / Uncontrolled Exposure of: TABLE 1- LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE) of §1.1310 Radiofrequency radiation exposure limits.

This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering the Power density, $S_{\text{limit}} = 1.0 \text{ mW/cm}^2$ in an uncontrolled exposure environment.

$\text{EIRP} = P_t - L_c + G_a$, where

Maximum output power according to the data sheet (AT86RF212B-ZU): $P_t = 11 \text{ dBm}$

Balun, Filter, Cable and Connector Loss (worst case): $L_c = 0 \text{ dB}$

Antenna Gain according to the data sheet (HYA13392): $G_a = 2 \text{ dBi}$

$\text{EIRP} = 13 \text{ dBm} \approx 19.95 \text{ mW}$ (Conversion formula: $\text{mW} = 10^{\text{dBm}/10}$)

The Friis formula used for power density:

$S = \text{EIRP} / (4 \cdot \pi \cdot r^2)$, where

Maximum radiated output power: $\text{EIRP} = 19.95 \text{ mW}$

Distance to user: $r = 20 \text{ cm}$

$S = 0.0079 \text{ mW/cm}^2$

Therefore, Smart Box Link is considered compliant with the rules for RF exposure without further test or analysis.

Sincerely,



Signature of contact person registered with FCC

Kim Jemail, Project Leader
on behalf of Teis Frantzen, Quality Manager