

DIGI28 ConnectCard for i.MX28 Maximum Permissible Exposure

FCC, Part 15 §1.1310

Industry Canada RSS-Gen §5.6

Calculations for Maximum Permissible Exposure Levels

Power Density = P_d (mW/cm²) = $EIRP/(4\pi d^2)$

$EIRP = P * G$

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

Numeric Gain = $10^{(G \text{ (dBi)}/10)}$

Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1.0 mW/cm²

Evaluation performed with highest gain antenna PC.11

| Mode | Freq. Band (MHz) | Antenna Gain (dBi) | Numeric Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Calculated Safe Distance @ 1mW/cm ² Limit(cm) | Minimum Separation Distance (cm) |
|-----------|------------------|--------------------|------------------------|-------------------------|------------------------|--|----------------------------------|
| 802.11 | 2400 – 2483.5 | 3.0 | 2.0 | 24.65 | 291.7 | 6.8 | 20.0* |
| | 5725 - 5850 | 4.5 | 2.8 | 24.60 | 288.4 | 8.0 | 20.0* |
| Bluetooth | 2.400-2483.5 | 3.0 | 2.0 | 8.07 | 6.4 | 1.0 | 20.0* |
| 802.11 | 5150 - 5250 | 4.5 | 2.8 | 14.55 | 28.5 | 2.5 | 20.0* |
| 802.11 | 5250 - 5350 | 4.5 | 2.8 | 16.54 | 45.1 | 3.2 | 20.0* |
| 802.11 | 5470 - 5725 | 4.5 | 2.8 | 17.00 | 50.0 | 3.3 | 20.0* |

*Note: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

Specification

Maximum Permissible Exposure Limits

FCC §1.1310 Limit = 1mW / cm² from 1.310 Table 1

RSS-Gen §5.6 Category I and Category II equipment shall comply with the applicable requirements of RSS-102.

Laboratory Measurement Uncertainty for Power Measurements

| | |
|-------------------------|----------|
| Measurement uncertainty | ±1.33 dB |
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