

NEO 3.0 Transmitters-RF Exposure Analysis

This document describes the aggregate RF exposure calculations for all simultaneous transmitting devices/antennas in the Checkpoint Systems Neo 3.0 pedestal antenna (overall device EVOLVE EG35 containing WiFi/BT, WiFi 2.4G, & NFC modules, and a metal detection accessory)

Transmitting devices:

1. EAS RF Detection System (Manufacturer: Checkpoint Systems, Inc.)
 - Integral part of NEO 3 EAS RF anti-theft system
 - Part# EVOLVE EG35 (FCC ID: DO4EG35)
 - Frequency Range: 7.825-8.575MHz
2. Radxa ZERO 3W WiFi/BT module (Manufacturer: Radxa Computer (Shenzhen) Co.,Ltd.)
 - WiFi/BT communication
 - Part# Radxa ZERO 3W D4E32 (FCC ID: 2BC6T-ZERO3W)
 - Frequency Range: BT: 2402-2480MHz; WiFi 2.4G: 2412-2462MHz; WiFi 5G: 5150-5250MHz, 5725-5850MHz
3. LM WiFi module (Manufacturer: LM Technologies Ltd)
 - WiFi communication for setup & configuration only
 - Part# 808-04xx (FCC ID: VVX808-04XX)
 - Frequency Range: WiFi 2.4G: 2412-2462MHz; WiFi 5G: 5150-5250MHz, 5725-5850MHz
4. USB NFC Card Reader module (Manufacturer: Advanced Card Systems Limited)
 - For reading of NFC-based cards to toggle system on/off
 - Part# ACM1252U-Z2 (FCC ID: V5MACM1252U-Z2)
 - Frequency Range: 13.56MHz
5. Hyperguard/Metalguard (Manufacturer: Alert MetalGuard ApS)
 - Metal detection for anti-theft
 - Part# Alert HyperGuard (FCC ID: S8OHYPER1730)
 - Frequency Range: 24.960kHz

Either SAR-based or MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (Evaluated_k term) shall be used to determine exemption for simultaneous transmission according to Formula (C.1) [repeated from § 1.1307(b)(3)(ii)(B)].

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1 \quad (C.1)$$

Taking into account each of the aforementioned transmitters:

1. EVOLVE EG35

i. Pre RF Exposure Test Report HB20260626028E-01, dated Jul. 24, 2026.

ii. Worst-case MPE ratios (reading/Limit):

Electric MPE ratio: $7.46/99.5=0.0749$

Magnetic MPE ratio: $0.08/0.26=0.307$

2. Radxa ZERO 3W WiFi/BT

i. Pre MPE Report STS2512337H01, dated Dec. 18, 2025.

ii. Worst-case MPE ratios: 0.0135

3. LM WiFi module

i. Pre SAR Test Report STR17058201H, dated. Jul. 04, 2017.

ii. Worst-case SAR = 0.262 W/kg, SAR Limit = 1.6 W/kg

SAR ratio: $0.262/1.6= 0.164$

4. NFC Card Reader module

i. Pre FC Part 15.225 Test Report RSZ160914001-00, dated. Oct. 17, 2016.

ii. Worst-case field strength reading=68.5 dBuV/m

Converting to V/m: 0.00266 V/m

MPE Limit = $824/f$, where f is in MHz

MPE ratio = $0.00266/ (824/13.56) = 0.000044$

5. Hyperguard/Metalguard

i. Operational frequency is 24.960 kHz < 100 kHz. Not included in calculation.

6. SUMMATION of transmitter MPE/SAR Ratios:

$(0.0749) + (0.307) + (0.0135) + (0.164) + (0.000044) = 0.559$

Since this number is <<1, this product is EXEMPT and compliant.