

Compliance with 47 CFR 15.247(i)

“Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.”

The EUT will only be used with a separation distance of 20 centimeters or greater between the antenna and the body of the user or nearby persons and can therefore be considered a mobile transmitter per 47 CFR 2.1091 (b). No radiating structure will be within 2.5cm of the user's hands or wrists. The EUT is categorically excluded from routine environmental evaluation per 47 CFR 2.1091(c).

The MPE estimates are as follows:

Table 1 in 47 CFR 1.1310 defines the maximum permissible exposure (MPE) for the general population as $1\text{mW}/\text{cm}^2$. The exposure level at a 20 cm distance from the EUT's transmitting antenna is calculated using the general equation:

$$S = (PG)/4\pi R^2$$

Where: S = power density (mW/cm^2)

P = power input to the antenna (mW)

G = numeric power gain relative to an isotropic radiator

R = distance to the center of the radiation of the antenna (20 cm = limit for MPE estimates)

PG = EIRP

Solving for S, the maximum power densities 20 cm from the transmitting antennas are summarized in the following tables:

MPE Estimates for Self Co-located Device

FCC ID: EHABTS080-1 (6820 Printer with Bluetooth Radio)

Bluetooth Radio

| Antenna Type | Antenna Part No. | Transmit Frequency (MHz) | Max Peak Conducted Output Power (mW) | Antenna Gain (dBi) | Minimum Antenna Cable Loss (dB) | Power Density @ 20 cm (mW/cm ²) | General Population Exposure Limit from 1.1310 (mW/cm ²) | Ratio of Power Density to the Exposure Limit |
|---------------------------|-------------------|-----------------------------|---|-----------------------|--|--|---|--|
| Internal Integral Antenna | PCB Trace Antenna | 2400 | 13.86 | -1.23 | 0 | 0.00208 | 1 | 0.00208 |

Worst Case Ratio of Power Density to the Exposure Limit = 0.00208 (Internal Integral Antenna)

Exposure Scenarios for 6820 Printer co-located with 700C

Per Note 24 shown below, the Sum of Worst Case Power Ratios cannot exceed 1.0

| 700C co-located radios Sum of Worst Case Ratios (Power Density to the Exposure Limit) (see following pages for details) | 6820 Printer Worst Case Ratio of Power Density to the Exposure Limit (FCC ID: EHABTS080-1) | Sum of Worst Case Ratios (Power Density to the Exposure Limit) | FCC Limit for Sum of Worst Case Ratios |
|---|---|--|--|
| 0.47068 | 0.00208 | 0.47276 | 1.0 |

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The results shown in the above table are equivalent to the Sum of the EIRP of the Co-located Transmitters (EIRP TX1 + EIRP TX2 + EIRP TX3) compared to the exposure limit. The benefit of this method, is that accounts for transmitters operating at differen

Please note that each radio transmits through its own antenna.

Please note that EIRP = ERP x 1.64, so EIRP is worst case. However, because some parties would prefer to see the calculation as the Sum of the ERP of the Two Co-located Transmitters, the table below shows compliance with ERP TX1 + ERP TX2 + ERP TX3

| GSM Radio (FCC ID: EHA700C-SMC45-1) Worst Case ERP | 802.11b Radio (FCC ID: HN2011B-2) Worst Case ERP | Bluetooth Radio (FCC ID: EHABTS080) Worst Case ERP | 6820 Printer (FCC ID: EHABTS080-1) Worst Case ERP | Sum of Worst Case ERPs | Power Density @ 20 cm | General Population Exposure Limit from 1.1310 |
|--|--|--|--|---------------------------|-----------------------------|---|
| (mW) | (mW) | (mW) | (mW) | (mW) | (mW/cm ²) | (mW/cm ²) |
| 1364.70 | 34.24 | 6.37 | 6.37 | 1411.68 | 0.28084 | 1.0 |

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Exposure Scenarios for 6820 Printer co-located with 730

Per Note 24 shown below, the Sum of Worst Case Power Ratios cannot exceed 1.0

| 730 co-located radios Sum of Worst Case Ratios (Power Density to the Exposure Limit) (see following pages for details) | 6820 Printer Worst Case Ratio of Power Density to the Exposure Limit (FCC ID: EHABTS080-1) | Sum of Worst Case Ratios (Power Density to the Exposure Limit) | FCC Limit for Sum of Worst Case Ratios |
|--|---|--|--|
| 0.03623 | 0.00208 | 0.03831 | 1.0 |

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The results shown in the above table are equivalent to the Sum of the EIRP of the Co-located Transmitters (EIRP TX1 + EIRP TX2 + EIRP TX3) compared to the exposure limit. The benefit of this method, is that accounts for transmitters operating at different frequencies against different exposure limits.

Please note that each radio transmits through its own antenna.

Please note that EIRP = ERP x 1.64, so EIRP is worst case. However, because some parties would prefer to see the calculation as the Sum of the ERP of the Two Co-located Transmitters, the table below shows compliance with ERP TX1 + ERP TX2 + ERP TX3

| 802.11b Radio (FCC ID: EHA-802CFI3) Worst Case ERP | Bluetooth Radio (FCC ID: EHABTM210) Worst Case ERP | 6820 Printer (FCC ID: EHABTS080-1) Worst Case ERP | Sum of Worst Case ERPs | Power Density @ 20 cm | General Population Exposure Limit from 1.1310 |
|--|--|---|---------------------------|-----------------------------|---|
| (mW) | (mW) | (mW) | (mW) | (mW/cm ²) | (mW/cm ²) |
| 63.34 | 0.31 | 6.37 | 70.02 | 0.01393 | 1.0 |

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MPE Estimates for Self Co-located Device

Radios in 700C Handheld Computer

FCC ID: EHAEM3420 (either one CDMA or one GSM radio is installed in the 700C - never both)

New CDMA Radio (Replacement for HN2SB555-2)

| Antenna Type | Antenna Part No. | Transmit Frequency (MHz) | Max Peak Conducted Output Power (mW) | Antenna Gain (dBi) | Minimum Antenna Cable Loss (dB) | Power Density @ 20 cm (mW/cm ²) | General Population Exposure Limit from 1.1310 (mW/cm ²) | Ratio of Power Density to the Exposure Limit |
|--------------|------------------|-----------------------------|---|-----------------------|--|--|---|--|
| Dipole | 805-606-204 | 1850 | 447 | 4 | 0 | 0.223 | 1 | 0.223 |
| Dipole | 805-606-102 | 824 | 480 | 3 | 0 | 0.191 | 0.55 | 0.347 |
| Dipole | 805-606-102 | 1850 | 447 | 3 | 0 | 0.177 | 1 | 0.177 |

Worst Case Ratio of Power Density to the Exposure Limit = 0.347

FCC ID: HN2SB555-2 (either one CDMA or one GSM radio is installed in the 700C - never both)

Old CDMA Radio

| Antenna Type | Antenna Part No. | Transmit Frequency (MHz) | Max Peak Conducted Output Power (mW) | Antenna Gain (dBi) | Minimum Antenna Cable Loss (dB) | Power Density @ 20 cm (mW/cm ²) | General Population Exposure Limit from 1.1310 (mW/cm ²) | Ratio of Power Density to the Exposure Limit |
|--|------------------|-----------------------------|---|-----------------------|--|--|---|--|
| External tuned dipole (dual band 800 / 1900 MHz) | 805-606-202 | 824 | 224 | 3 | 0 | 0.089 | 0.55 | 0.1619 |
| External tuned dipole (dual band 800 / 1900 MHz) | 805-606-202 | 1850 | 224 | 3 | 0 | 0.089 | 1 | 0.0889 |
| External tuned dipole (single band 1900 MHz) | 805-606-204 | 1850 | 224 | 4 | 0 | 0.112 | 1 | 0.1119 |

Worst Case Ratio of Power Density to the Exposure Limit = 0.1619 (External Tuned Dipole Antenna - Dual Band at 824 MHz)

FCC ID: EHA700C-SMC45-1 (either one CDMA or one GSM radio is installed in the 700C - never both)

GSM/GPRS Radio

| Antenna Type | Antenna Part No. | Transmit Frequency (MHz) | Max Peak Conducted Output Power (mW) | Antenna Gain (dBi) | Minimum Antenna Cable Loss (dB) | Power Density @ 20 cm (mW/cm ²) | General Population Exposure Limit from 1.1310 (mW/cm ²) | Ratio of Power Density to the Exposure Limit |
|--|------------------|-----------------------------|---|-----------------------|--|--|---|--|
| External tuned dipole (dual band 900 / 1900 MHz) | 805-606-202 | 1850 | 891 | 3 | 0 | 0.354 | 1 | 0.3537 |
| External tuned dipole (single band 1900 MHz) | 805-606-204 | 1850 | 891 | 4 | 0 | 0.445 | 1 | 0.4453 |

Worst Case Ratio of Power Density to the Exposure Limit = 0.4453 (External Tuned Dipole Antenna)

FCC ID: HN22011B-2

802.11 (b) Radio

| Antenna Type | Antenna Part No. | Transmit Frequency (MHz) | Max Peak Conducted Output Power (mW) | Antenna Gain (dBi) | Minimum Antenna Cable Loss (dB) | Power Density @ 20 cm (mW/cm ²) | General Population Exposure Limit from 1.1310 (mW/cm ²) | Ratio of Power Density to the Exposure Limit |
|--------------------------|------------------|-----------------------------|---|-----------------------|--|--|---|--|
| Internal slot F | 805-625-001 | 2400 | 89 | 1.2 | 0 | 0.023 | 1 | 0.0233 |
| Internal folded monopole | 805-608-003 | 2400 | 89 | -2 | 0 | 0.011 | 1 | 0.0112 |

Worst Case Ratio of Power Density to the Exposure Limit (when co-located with CDMA Radio) = 0.0233 (Internal slot F Antenna)

FCC ID: HN2ABTM3-3

Old Bluetooth Radio (Will become obsolete, will be replaced by EHABTS080)

| Antenna Type | Antenna Part No. | Transmit Frequency (MHz) | Max Peak Conducted Output Power (mW) | Antenna Gain (dBi) | Minimum Antenna Cable Loss (dB) | Power Density @ 20 cm (mW/cm ²) | General Population Exposure Limit from 1.1310 (mW/cm ²) | Ratio of Power Density to the Exposure Limit |
|---------------------------|------------------|-----------------------------|---|-----------------------|--|--|---|--|
| Internal Integral Antenna | ABTM3 | 2400 | 3.78 | -5.77 | 0 | 0.00020 | 1 | 0.00020 |

Worst Case Ratio of Power Density to the Exposure Limit = 0.00020 (Internal Integral Antenna)

FCC ID: EHABTS080

New Bluetooth Radio (Replacement for HN2ABTM3-3)

| Antenna Type | Antenna Part No. | Transmit Frequency (MHz) | Max Peak Conducted Output Power (mW) | Antenna Gain (dBi) | Minimum Antenna Cable Loss (dB) | Power Density @ 20 cm (mW/cm ²) | General Population Exposure Limit from 1.1310 (mW/cm ²) | Ratio of Power Density to the Exposure Limit |
|---------------------------|-------------------|-----------------------------|---|-----------------------|--|--|---|--|
| Internal Integral Antenna | PCB Trace Antenna | 2400 | 13.86 | -1.23 | 0 | 0.00208 | 1 | 0.00208 |

Worst Case Ratio of Power Density to the Exposure Limit = 0.00208 (Internal Integral Antenna)

Exposure Scenarios for 700C

Per Note 24 shown below, the Sum of Worst Case Power Ratios cannot exceed 1.0

| GSM Radio Worst Case Ratio of Power Density to the Exposure Limit (FCC ID: EHA700C-SMC45-1) | 802.11b Radio Worst Case Ratio of Power Density to the Exposure Limit (FCC ID: HN2011B-2) | Bluetooth Radio Worst Case Ratio of Power Density to the Exposure Limit (FCC ID: EHABTS080) | Sum of Worst Case Ratios (Power Density to the Exposure Limit) | FCC Limit for Sum of Worst Case Ratios |
|--|--|---|--|--|
| 0.44530 | 0.02330 | 0.00208 | 0.47068 | 1.0 |

PASS

The results shown in the above table are equivalent to the Sum of the EIRP of the three Co-located Transmitters (EIRP TX1 + EIRP TX2 + EIRP TX3) compared to the exposure limit. The benefit of this method, is that accounts for transmitters operating at different frequencies against different exposure limits.

Please note that each radio transmits through its own antenna.

Please note that EIRP = ERP x 1.64, so EIRP is worst case. However, because some parties would prefer to see the calculation as the Sum of the ERP of the Two Co-located Transmitters, the table below shows compliance with ERP TX1 + ERP TX2 + ERP TX3

| GSM Radio (FCC ID: EHA700C-SMC45-1) Worst Case ERP | 802.11b Radio (FCC ID: HN2011B-2) Worst Case ERP | Bluetooth Radio (FCC ID: EHABTS080) Worst Case ERP | Sum of Worst Case ERPs | Power Density @ 20 cm | General Population Exposure Limit from 1.1310 |
|--|--|--|---------------------------|-----------------------------|---|
| (mW) | (mW) | (mW) | (mW) | (mW/cm ²) | (mW/cm ²) |
| 1364.70 | 34.24 | 6.37 | 1405.31 | 0.27958 | 1.0 |

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MPE Estimates for Self Co-located Device

Radios in 730 Handheld Computer

FCC ID: EHA-802CFI3

802.11 (b) Radio

| Antenna Type | Antenna Part No. | Transmit Frequency (MHz) | Max Peak Conducted Output Power (mW) | Antenna Gain (dBi) | Minimum Antenna Cable Loss (dB) | Power Density @ 20 cm (mW/cm ²) | General Population Exposure Limit from 1.1310 (mW/cm ²) | Ratio of Power Density to the Exposure Limit |
|--------------------------|------------------|-----------------------------|---|-----------------------|--|--|---|--|
| Internal Diversity Patch | 805-617-001 | 2400 | 104.7 | 2.4 | 0 | 0.036 | 1 | 0.0362 |

Worst Case Ratio of Power Density to the Exposure Limit = 0.0362 (Internal Diversity Patch Antenna)

FCC ID: EHABTM210

Bluetooth Radio

| Antenna Type | Antenna Part No. | Transmit Frequency (MHz) | Max Peak Conducted Output Power (mW) | Antenna Gain (dBi) | Minimum Antenna Cable Loss (dB) | Power Density @ 20 cm (mW/cm ²) | General Population Exposure Limit from 1.1310 (mW/cm ²) | Ratio of Power Density to the Exposure Limit |
|--------------------------|------------------|-----------------------------|---|-----------------------|--|--|---|--|
| Integral Ceramic Antenna | 104F2450S1 | 2400 | 0.549 | -5 | 0 | 0.00003 | 1 | 0.00003 |

Worst Case Ratio of Power Density to the Exposure Limit = 0.00003 (Integral Ceramic Antenna)

Exposure Scenarios for 730

Per Note 24 shown below, the Sum of Worst Case Power Ratios cannot exceed 1.0

| 802.11b Radio Worst Case Ratio of Power Density to the Exposure Limit (FCC ID: EHA- 802CFI3) | Bluetooth Radio Worst Case Ratio of Power Density to the Exposure Limit (FCC ID: EHABTM210) | Sum of Worst Case Ratios (Power Density to the Exposure Limit) | FCC Limit for Sum of Worst Case Ratios |
|--|--|--|--|
| 0.03620 | 0.00003 | 0.03623 | 1.0 |

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The results shown in the above table are equivalent to the Sum of the EIRP of the Two Co-located Transmitters (EIRP TX1 + EIRP TX2) compared to the exposure limit. The benefit of this method, is that it accounts for transmitters operating at different frequencies against different exposure limits.

Please note that each radio transmits through its own antenna.

Please note that EIRP = ERP x 1.64, so EIRP is worst case. However, because some parties would prefer to see the calculation as the Sum of the ERP of the Two Co-located Transmitters, the table below shows compliance with ERP TX1 + ERP TX2

| 802.11b Radio (FCC ID: EHA-802CFI3) Worst Case ERP | Bluetooth Radio (FCC ID: EHABTM210) Worst Case ERP | Sum of Worst Case ERPs | Power Density @ 20 cm | General Population Exposure Limit from 1.1310 |
|--|--|---------------------------|--------------------------|---|
| (mW) | (mW) | (mW) | (mW/cm ²) | (mW/cm ²) |
| 63.34 | 0.31 | 63.65 | 0.01266 | 1.0 |

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Excerpts from TCB Training, April 3, 2002, “Mobile Transmitters”, Slide 6:

“Devices operating in multiple frequency bands

- ❑ *When RF exposure evaluation is required for TCB approval*
 - *Separate antennas – estimated minimum separation distances may be considered for the frequency bands that do not require evaluation or TCB approval, however, the estimated distance should take into account the effect of co-located transmitters. (Note 24)*

Note 24 According to multiple frequency exposure criteria, the ratio of field strength or power density to the applicable exposure limit at the exposure location should be determined for each transmitter and the sum of these ratios must not exceed 1.0 for the location to be compliant.”

The sum of the worst-case power ratios in any scenario does not exceed 1.0 (see Note 24 above); therefore, the exposure condition is compliant with FCC rules.