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*."

In the following configurations, the radios 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). The following MPE estimates are for the following configurations:

- Bluetooth radio in the 6820 printer
- Bluetooth radio in the 6820 printer with CN3 handheld computer docked in the terminal holder
    - Bluetooth in 6820; 802.11(b)/(g) combo radio in CN3
    - Bluetooth in 6820; 802.11(b)/(g) combo radio and EM5625 radio in CN3
    - Bluetooth in 6820; 802.11(b)/(g) combo radio and MC75 in CN3

The radios can transmit simultaneously. Each radio transmits through its own antenna. The radios are subject to routine RF evaluation to the General Population/Uncontrolled Exposure limits of 1.1310.

The MPE estimates are as follows:

Table 1 in 47 CFR 1.1310 defines the maximum permissible exposure (MPE) for the general population. 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 tables on the following pages:

RF Exposure Info for 6820 printer and CN3 handheld computer

MPE Estimates for Self Co-located Device

FCC ID: EHABTS080-1

Bluetooth Radio in 6820

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	PCB Trace	2400	13.86	-1.23	0	0.00208	1.000	0.002

Worst Case Ratio of Power Density to the Exposure Limit = 0.002

FCC ID: EHA-01CN3

802.11/Bluetooth combo radio in CN3

Antenna Type	Antenna Part No.	Transmit (MHz)	Max Peak (mW)	Antenna Gain (dBi)	Minimum (dB)	Power (mW/cm^2)	General (mW/cm^2)	Ratio of Power
802.11 PIFA	805-646-001	2400	174.58	1.34	0	0.04729	1.000	0.047
BT Chip	Unknown	2400	1.629	-3.33	0	0.00015	1.000	0.000

Worst Case Ratio of Power Density to the Exposure Limit = 0.047 (802.11)
Worst Case Ratio of Power Density to the Exposure Limit = 0.00015 (BT)

FCC ID: EHA-02CN3

Composite device: EM5625 radio and 802.11/Bluetooth combo radio in CN3

Antenna Type	Antenna Part No.	Transmit (MHz)	Max Peak (mW)	Antenna Gain (dBi)	Minimum (dB)	Power (mW/cm^2)	General (mW/cm^2)	Ratio of Power
PIFA	805-648-001	824	724.44	2	0	0.22842	0.549	0.416
PIFA	805-648-001	1850	765.6	2	0	0.24140	1.000	0.241
802.11 PIFA	805-646-001	2400	174.58	1.34	0	0.04729	1.000	0.047
BT Chip	Unknown	2400	1.629	-3.33	0	0.00015	1.000	0.000

Worst Case Ratio of Power Density to the Exposure Limit = 0.416 (Cellular/PCS)
Worst Case Ratio of Power Density to the Exposure Limit = 0.047 (802.11)
Worst Case Ratio of Power Density to the Exposure Limit = 0.00015 (BT)

FCC ID: EHA-03CN3

Composite device: MC75 radio and 802.11/Bluetooth combo radio in CN3

Antenna Type	Antenna Part No.	Transmit (MHz)	Max Peak (mW)	Antenna Gain (dBi)	Minimum (dB)	Power (mW/cm^2)	General (mW/cm^2)	Ratio of Power
Dualband	MiniMAG	824	1412.538	-1	0	0.22322	0.549	0.406
Dualband	MiniMAG	1850	724.436	1.65	0	0.21073	1.000	0.211
802.11 PIFA	805-646-001	2400	174.58	1.34	0	0.04729	1.000	0.047
BT Chip	Unknown	2400	1.629	-3.33	0	0.00015	1.000	0.000

Worst Case Ratio of Power Density to the Exposure Limit = 0.406 (Cellular/PCS)
Worst Case Ratio of Power Density to the Exposure Limit = 0.047 (802.11)
Worst Case Ratio of Power Density to the Exposure Limit = 0.00015 (BT)

Worst Case Co-located Exposure Condition in of 6820 and CN3 with DHIB

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

Bluetooth Radio Worst Case Ratio of Power Density to the Exposure Limit	**802.11/Bluetooth Combo Radio** Worst Case Ratio of Power Density to the Exposure Limit	**802.11/Blueto oth Combo Radio** Worst Case Ratio of Power Density to the Exposure Limit		**Sum of Worst Case Ratios (Power Density to the Exposure Limit)**	**FCC Limit for Sum of Worst Case Ratios**	
0.002	0.047	0.00015		0.049	1.0	PASS

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 accounts for transmitters operating at different frequencies against different exposure limits.

Worst Case Co-located Exposure Condition in of 6820 and CN3 with DHIB and EM5625

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

Bluetooth Radio Worst Case Ratio of Power Density to the Exposure Limit	**802.11/Bluetooth Combo Radio** Worst Case Ratio of Power Density to the Exposure Limit	**802.11/Blueto oth Combo Radio** Worst Case Ratio of Power Density to the Exposure Limit	**EM5625 Radio** Worst Case Ratio of Power Density to the Exposure Limit	**Sum of Worst Case Ratios (Power Density to the Exposure Limit)**	**FCC Limit for Sum of Worst Case Ratios**	
0.002	0.047	0.00015	0.416	0.465	1.0	PASS

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 accounts for transmitters operating at different frequencies against different exposure limits.

Worst Case Co-located Exposure Condition in of 6820 and CN3 with DHIB and MC75

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

Bluetooth Radio Worst Case Ratio of Power Density to the Exposure Limit	**802.11/Bluetooth Combo Radio** Worst Case Ratio of Power Density to the Exposure Limit	**802.11/Blueto oth Combo Radio** Worst Case Ratio of Power Density to the Exposure Limit	**MC75 Radio** Worst Case Ratio of Power Density to the Exposure Limit	**Sum of Worst Case Ratios (Power Density to the Exposure Limit)**	**FCC Limit for Sum of Worst Case Ratios**	
0.002	0.047	0.00015	0.406	0.455	1.0	PASS

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 accounts for transmitters operating at different frequencies against different exposure limits.

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 ratios (power density to the exposure limit) does not exceed 1.0; therefore, the exposure condition is compliant with FCC rules.