

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). Calculations are provided for each radio transmitting through its own internal antenna and optional external antenna.

The total transmit power is less than 1.5 W (ERP), therefore 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. 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/cm²)

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:

MPE Estimates for Co-located Device

FCC ID: KBCIX600-MC8765								
Edge/GSM/GPRS/WCDMA/UMTS/HSDPA								
Antenna Type	Antenna Part No.	Transmit Frequency	Max Peak Conducted Output Power	Antenna Gain	Min. Antenna Cable Loss	Power Density @ 20 cm	General Population Exposure Limit from 1.1310	Ratio of Power Density to the Exposure Limit
		(MHz)	(mW)	(dBi)	(dB)	(mW/cm)	(mW/cm ²)	
Internal UMTS Skycross WAN	59-0479-001	1850.2	817	0.3	1.76	0.116	1	0.116
Internal UMTS Skycross WAN	59-0479-001	824.2	1611	2.7	0.89	0.486	0.56	0.885
Ext MaxRad	BMLPVDB800/1900	1850.2	817	3	4.61	0.112	1	0.112
Ext MaxRad	BMLPVDB800/1900	824.2	1611	3	2.45	0.364	0.56	0.662
Duty Cycle for GPRS (the worst case) is 25%								
Worst Case Ratio of Power Density to the Exposure Limit = 0.885								
Duty Cycle not taken into consideration								

MPE Estimates for Co-located Device

FCC ID: KBCIX600-IWLBT

IEEE 802.11 (a) (b) g)

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/c m ²)	General Population Exposure Limit from 1.1310 (mW/cm ²)	Ratio of Power Density to the Exposure Limit
PiFa MAIN	25.90215.001	5320	100.69	2.26	0	0.034	1	0.034
PiFa MAIN	25.90215.001	2462	92.9	2.41	0	0.032	1	0.032
Worst Case Ratio of Power Density to the Exposure Limit = 0.034								

FCC ID: KBCIX600-IWLBT

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/c m ²)	General Population Exposure Limit from 1.1310 (mW/cm ²)	Ratio of Power Density to the Exposure Limit
Etenna's AccuWave	EA2400	2402	0.85	3	0	0.0003	1	0.0003
Worst Case Ratio of Power Density to the Exposure Limit = 0.0003								

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

GSM/GPRS WCDMA/Edge Worst Case Ratio of Power Density to the Exposure Limit	802.11a Radio Worst Case Ratio of Power Density to the Exposure Limit	Bluetooth 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		
0.885	0.034	0.0003		0.9193	1.0	PASS	
