RF Exposure Calculations

MPE for Combined 900 FHSS and 2.4 GHz FHSS

The worst-case RF exposure condition is for both frequency hopping radios operating simultaneously into the external antenna. MPE calculations are below.

Silver Spring Networks									
FCC ID: OWS-NIC714									
External antenna									
							Calculate mW/cm2 here. Enter frequency in MI		
				User Manual			Calculation of Limits from 1.1310 Table 1		
S1 for 900 MHz		0.60	maximum	RFx distance, cm	20				
S3 for 2.4 GHz		1.00	maximum				F(MHz)	Actual F, MHz	
							0.3-3	0.5	
Max RF Power	TX Antenna	MPE distance	S, mW/cm2	S, mW/cm2 at	Comment 1	Comment 2	*3.0 - 30.0*	*5*	
P, dBm	G, dBi	cm	at 20 cm dist	20			**30.0-300**	**55**	
				cm			*300-1500*	*902*	
29.6	3.00	15.5	0.359	0.359	900 MHz FHSS	Internal antenna	1500-100000	5805	
26.6	3.6	9.1	0.207	0.207	2.4 GHz FHSS	Internal antenna			
							Enter P(mW)	Equivalent dBm	Enter dBm
				% 900MHz RFx	59.8%				
				% 2.4 GHz RFx	20.7%				
				Total RFx	80.52%				
Basis of Calculations:							*555*	27.44	*29.52*
E^2/3770 = S, mW/cm2									
E, V/m = (Pwatts*Ggain*30)^.5/d, meters									
d = ((Pwatts*G*30)/3770*S))^0.5			Pwatts*Ggain = 10^(PdBm-30+GdBi)/10)						
S@dist2 = S@MPEdist(MPE/dist2)^2									
NOTE: For mobile or fixed location transmitters, minimum separation distance is for FCC compliance is 20 cm,									
even if calculations indicate MPE distance is less									