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Telecommunication Certification Body
PCTEST Engineering Laboratory Inc.
6660-B Dobbin Road
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RE: 2.5GHz Outdoor UE FCC ID: PKTODUAFD1 MPE Calculation

To Whom It May Concern,

The IPWireless Outdoor UE is considered to be fixed equipment designed for either wall or pole mounting and is intended for installation with a minimum separation distance to ensure compliance with Maximum Permissible Exposure (MPE) limits.

The IPWireless Outdoor UE uses time division duplex (TDD) technology in normal operation with a maximum duty cycle of 80%, therefore source based averaging can be applied in the MPE calculation.

MPE Distance Calculation	5.5MHz Channel		11MHz Channel	
Antenna Gain	14.92	dBi	15.71	dBi
Line Loss	0	dB	0	dB
Antenna Gain Ratio	31.04559588		37.23917	
Outdoor UE Model AFD Tx Output Power	24	dBm	24	dBm
Output Power mW	251.19	mW	251.19	mW
Maximum EIRP (per Channel)	7798.30	mW	9354.06	mW
MPE Limit from 1.1310	1	mw/cm ²	1	mw/cm ²
Un-controlled/General Public Limit				
Minimum Distance to meet MPE Limit	24.91	cm	27.28	cm
(100% Duty Cycle)	9.80	inches	10.73	inches

Table 1: 100% Duty Cycle Calculation

Sourced Based Duty Cycle Adjustment	5.5MHz Channel		11MHz Channel	
Total Timeslots in Frame	15		15	
Timeslots for Transmit	12		12	
Timeslots for Receive	10		10	
Percentage time transmitting in Tx timeslot	100	%	100	%
Power Control Attenuation	0	dB	0	dB
Duty Cycle Correction Factor	80.00	%	80.00	%
Minimum Distance to meet MPE Limit	22.3	cm	24.4	cm
(80% Duty Cycle)	8.8	inches	9.6	inches

Table 2: Source Based Averaging Calculation

The above calculations show the 2.5GHz Outdoor UE complies with the un-controlled /General Public limit of $1\text{mW}/\text{cm}^2$ at a minimum distance of 24.4cm for operation using either 5.5MHz or 11MHz channels.

Yours Faithfully



P Warburg
Principal Engineer
IPWireless UK Ltd