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**RE: 2.5GHz UE P1D FCC ID: PKTP1DAAB MPE Calculation**

To Whom It May Concern,

The IPWireless UE P1D Wireless Broadband Modem is intended for operation with a separation gap of minimum 20cm between the user and the equipment, therefore the RF Exposure performance can be assessed by a Maximum Permissible Exposure (MPE) calculation.

The IPWireless modem uses time division duplex (TDD) technology in normal operation with a maximum duty cycle of 33%, therefore source based averaging can be applied in the MPE calculation.

<b>MPE Distance Calculation</b>	<b>5MHz Channel</b>	
Antenna Gain	2	dBi
Line Loss	0	dB
Antenna Gain Ratio	1.584893192	
UE P1D Model KF Tx Output Power	24	dBm
Output Power mW	251.19	mW
Maximum EIRP (per Channel)	398.11	mW
MPE Limit from 1.1310	1	mw/cm <sup>2</sup>
Un-controlled/General Public Limit		
<b>Minimum Distance to meet MPE Limit</b>	<b>5.63</b>	<b>cm</b>
(100% Duty Cycle)	<b>2.21</b>	<b>inches</b>

**Table 1: 100% Duty Cycle Calculation**



<b>Sourced Based Duty Cycle Adjustment</b>		
Total Timeslots in Frame	15	
Timeslots for Transmit	5	
Timeslots for Receive	10	
Percentage time transmitting in Tx timeslot	100	%
Power Control Attenuation	0	dB
Duty Cycle Correction Factor	33.33	%
<b>Minimum Distance to meet MPE Limit</b>	<b>3.25</b>	<b>cm</b>
(33.33% Duty Cycle)	<b>1.28</b>	<b>inches</b>

**Table 2: Source Based Averaging Calculation**

The calculations above show the 2.3GHz UE P1D modem complies with the uncontrolled /General Public limit of  $1\text{mW}/\text{cm}^2$  at a minimum distance of 3.3cm for operation using 5MHz channels.

Yours Faithfully

P Warburg  
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IPWireless UK Ltd