

**3<sup>rd</sup> September 2012**

**RFI Global Services Ltd  
Pavilion A  
Ashwood Business Park  
Basingstoke  
Hampshire  
RG23 8BG**

**RE: PCI Express Mini Module FCC ID: PKTPEMAMW MPE Calculation**

To Whom It May Concern,

The General Dynamics Broadband PCI Express Mini Module is considered to be mobile equipment and intended for operation with a minimum separation distance of 20cm between the user and the equipment, therefore the RF Exposure performance can be assessed by a Maximum Permissible Exposure (MPE) calculation.

The General Dynamics Broadband PCI Express Mini module is a dual-band device so two MPE assessments are provided to cover both bands of operation.

<b>MPE Distance Calculation</b>	<b>10MHz Channel</b>	
Antenna Gain	5	dBi
Line Loss	0	dB
Antenna Gain Ratio	3.16227766	
PCIe Mini Module Model AMW Tx Output Power	23	dBm
Upper Power Tolerance	2	dB
Output Power	316.23	mW
Maximum EIRP (per Channel)	1000.00	mW
Frequency	1710	MHz
MPE Limit from 1.1310	1.000	mw/cm <sup>2</sup>
Un-controlled/General Public Limit		
<b>Minimum Distance to meet MPE Limit</b>	<b>8.92</b>	<b>cm</b>
(100% Duty Cycle)	<b>3.51</b>	<b>inches</b>

**Table 1: Band 4 MPE Calculation**

<b>MPE Distance Calculation</b>	<b>5MHz Channel</b>	
Antenna Gain	8.6	dBi
Line Loss	0	dB
Antenna Gain Ratio	7.244359601	
PCIe Mini Module Model AMW Tx Output Power	23	dBm
	2	
Output Power mW	316.23	mW
Maximum EIRP (per Channel)	2290.87	mW
Frequency	699	MHz
MPE Limit from 1.1310	0.466	mw/cm <sup>2</sup>
Un-controlled/General Public Limit		
<b>Minimum Distance to meet MPE Limit</b>	<b>19.78</b>	<b>cm</b>
(100% Duty Cycle)	<b>7.78</b>	<b>inches</b>

**Table 2: Band 12 MPE Calculation**

The calculations above show the LTE PCI Express Mini Module complies with the Un-controlled /General Public limits at a minimum distance of 20cm for operation using all bands.

Yours Faithfully



P Warburg  
Principal Engineer  
General Dynamics Broadband