

1<sup>st</sup> October 2015

**Telecommunication Certification Body  
UL Verification Services Ltd  
Offices 18-26 Grove House  
Lutyens Close  
Chineham Court,  
Basingstoke  
Hampshire  
RG24 8AG**

**RE: Band 12 RN2420 eNode B FCC ID: PKTNODEBBBY MPE Calculation.**

To Whom It May Concern,

The General Dynamics Broadband Band 12 RN2420 eNode B is considered to be fixed equipment and intended for operation with separation distances greater than 20cm between the user and the equipment. Therefore the RF Exposure performance can be assessed by a Maximum Permissible Exposure (MPE) calculation using the limits defined in Part 1.1310 Table 1B for the General Population/Uncontrolled Exposure category.

The General Dynamics Broadband Band 12 RN2420 eNode B uses frequency division duplex (FDD) technology in normal operation with a duty cycle of 100%, therefore source based averaging is not applied in the MPE calculation.

MPE Distance Calculation	Channel Size		
	5MHz	10MHz	
Antenna Gain	20	20	dBi
Line Loss	0	0	dB
Antenna Gain Ratio	100	100	
V6 eNode B Tx Output Power (per branch)	40	40	dBm
Upper Power Tolerance (per branch)	2	2	
Number of Transmitter Branches	2	2	
Total Output Power - all branches	31697.86	31697.86	mW
Maximum EIRP - all branches	3169786.38	3169786.38	mW
Frequency	729	729	MHz
MPE Limit from 1.1310	0.486	0.486	mw/cm <sup>2</sup>
Un-controlled/General Public Limit			
<b>Minimum Distance to meet MPE Limit</b>	<b>720.43</b>	<b>720.43</b>	<b>cm</b>
(100% Duty Cycle)	<b>283.41</b>	<b>283.41</b>	<b>inches</b>

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

The calculations above show the General Dynamics Broadband Band 12 RN2420 eNode B complies with the un-controlled /General Public limit of  $0.486\text{mW}/\text{cm}^2$  at a minimum distance of 7.21m for operation using either 5MHz or 10MHz channel sizes.

Yours Faithfully

A handwritten signature in black ink, appearing to be 'P Warburg', with a stylized flourish at the end.

P Warburg  
Principal Engineer  
General Dynamics Broadband.