

30th August 2013

**UL VS Ltd
Pavillion A
Ashwood Business Park
Basingstoke
Hampshire
RG23 8BG**

RE: Application of Source Based Averaging to the RF Exposure Calculation.

To whom it may concern,

The General Dynamics Broadband PCI Express Mini module is a time division duplex W-CDMA based wireless modem and the design/operation is based on the UMTS 3GPP TDD air interface requirements.

The air interface supports a radio frame length of 10ms, this radio frame is divided into 15 timeslots each of duration 666.67 μ S. As defined in the applicable 3GPP/ETSI documentation, of these 15 timeslots, timeslots 0-9 are assigned to the downlink (module receive) and timeslots 10-14 are assigned to the uplink (module transmit). This is the default timeslot configuration defined by 3GPP/ETSI Standards.

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
DL	DL	DL	DL	DL	DL	DL	DL	DL	DL	UL	UL	UL	UL	UL
BCH / FACH	FACH	DSCH	DSCH	DSCH	DSCH	DSCH	DSCH	DSCH	DSCH	RACH	USCH	USCH	USCH	USCH

Of the timeslots assigned to the uplink, timeslots 11-14 are used to transmit the subscriber's data and control signals to the base station. Timeslot 10 is reserved for the call setup procedure as a call can only be initiated by the subscriber. Timeslot 10 transmits the Random Access CHannel to the base station as part of the call setup procedure, once the call setup procedure has been completed, the RACH is no longer transmitted for remaining duration of the call and the PCI Express Mini module only transmits on the remaining timeslots 11-14.

The default timeslot assignment is modified to allow the transmitter (Uplink) to occupy upto 12 timeslots, this gives a maximum duty cycle for the transmitter of 80%.

Based on the inherent TDD operation of the PCI Express Mini module, source based averaging has been applied to the MPE calculations with the unit transmitting on 12 out of 15 timeslots as this is worst-case normal operation of the unit when transmitting.

Yours sincerely



Peter Warburg
Principal Engineer
General Dynamics Broadband