Justification letter for RF exposure

Note : The following is excerpted from the inquiry letter send to FCC, being rephrased.

3000B2 is a composite product with capabilities to transmit Bluetooth and WIFI (802.11b/g) simutanaously. it's a portable device for body worn only. The closest distance of BT/WIFI antennas pair is < 5 cm, but > 2.5cm. Bluetooth RF output power is 1.7 mW conducted, WIFI RF output power is 14.3 mW conducted. Bluetooth transmitter and Wifi transmitter are integrated in one combo PCB card.

There's another product which is in the same product series, called 3000B4. The product to be certified 3000B2 is exactly the same as 3000B4 except one thing : 3000B4 has a GPRS transmitter, but 3000B2 doesn't have this GPRS transmitter. So 3000B2 is actually a simplified version of 3000B4. Internal photos in the next page show the difference between these two products.

The FCC ID of 3000B4 is T5M3000B4. 3000B4 falls into KDB 648474 as it's a product authorized under part 22H, 24E with built in unlicensed transmitters. Also according to KDB 447498, 4) d) The simultanous transmission SAR evaluation precedure for cellphone in KDB 648474 may be applied to antennas that are built-in within a PDA or UMPC. So we as a TCB can certify 3000B4. There's NO simutanaous transmission between GPRS and WIFI, but with simultaneous transmission between GPRS and BT. The antenna distance between GPRS and BT is also larger than 2.5 cm. SAR has been tested on 3000B4, includes standalone WIFI SAR test and standalone GPRS SAR tests on two bands. Standalone WIFI SAR test results are below detection limit.

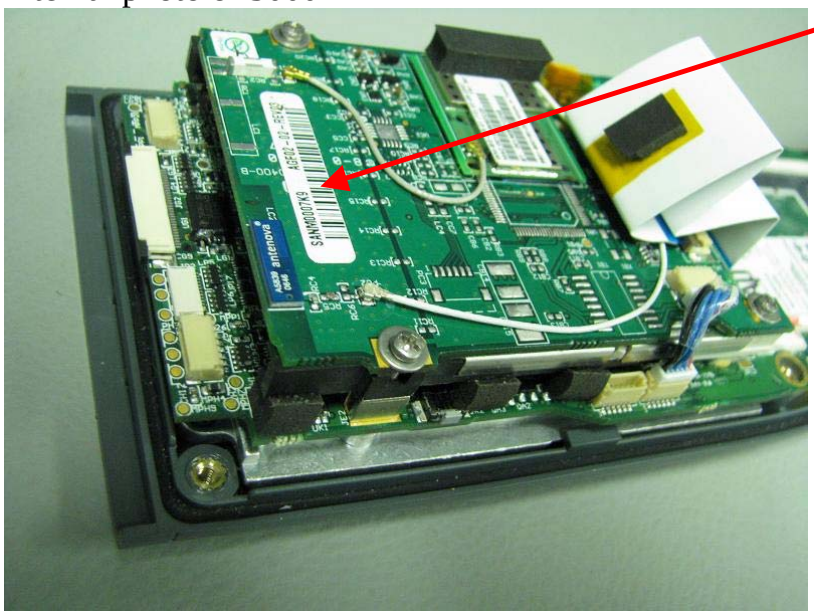
Complete SAR tests had been done on 3000B4. WIFI conducted output power is 14mW > Pref (12mW), so standalone WIFI (802.11 b/g) SAR test was also conducted on 3000B4, the WIFI SAR level is below detection limit.

No SAR tests have been done on 3000B2. Although 3000B2 and 3000B4 are different products, the only difference is that 3000B4 has a GPRS card, 3000B2 doesn't. The physical location of WIFI/Bluetooth combo PCB, location of antennas, main PCBs and all other hardwares are all exactly the same, the enclosures are exactly the same as well. Same 13.56MHz RFID on the back of the products.

Taking into account the output power of WLAN is so low, below single transmitter's SAR threshold 24mW, along with the below detection limit SAR

level for 3000B4, it's our enginnering judgement that 3000B2 complies to RF exposure requirements, no need to conduct stand-alone WIFI SAR tests although there's simultanouos transmission between WIFI and Bluetooth.

Internal photo of 3000B2

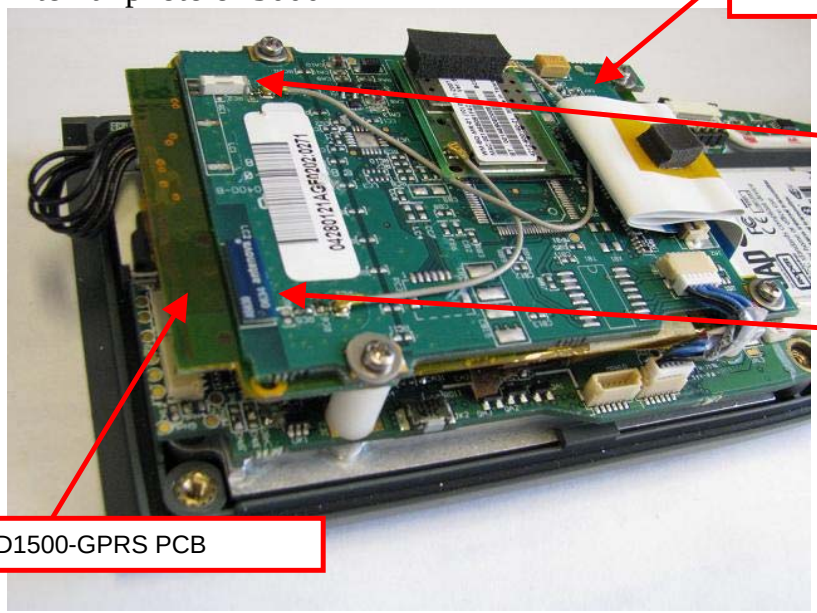


Internal photo of 3000B2 :
EGF0400-Ethernet-WIFI-BT PCB

The only difference between 3000B4 and 3000B2 is : NO GPRS PCB on 3000B2 series.

Everything else is the same. Same hardware, same enclosure.

Internal photo of 3000B4



Internal photo of 3000B4 :
EGF0400-Ethernet-WIFI-BT PCB

Bluetooth antenna

WIFI antenna

EHD1500-GPRS PCB

Closest distance between BT antenna and WIFI antenna is > 2.5 cm, around 3.3 cm.

BT output power: 1.7 mW conducted
WIFI output power: 14. 3mW conducted

3000B4 has been certified under FCC ID: T5M3000B4.