GE Healthcare

8200 West Tower Avenue
Milwaukee, Wisconsin 53223
USA

May 6, 2008

BY ELECTRONIC FILING

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: GE Healthcare *Ex Parte*
ET Docket Nos. 04-186 and 02-380

Dear Ms. Dortch:

In previous filings, GE Healthcare ("GEHC") has raised a number of concerns about the potential for harmful interference to safety-of-life medical telemetry operations under the current proposal to allow unlicensed operations in the TV white spaces.[1] Both grandfathered Part 15 unlicensed devices currently operating in the white spaces and Part 95 Wireless Medical Telemetry Service ("WMTS") operations in channel 37 could be affected.

The manufacturing, sale and use of Part 15 medical telemetry devices with equipment authorizations granted prior to October 16, 2002 has been indefinitely grandfathered by the Commission.[2] Because hospitals continue to use this equipment, GEHC has proposed a one-year delay, until Feb 2010, for new white space operations in channels 33-36, to allow users sufficient time to become aware of the new operations, and to plan and execute a transition to WMTS. In addition, the requested delay would be consistent with Congress's desire to minimize the barriers to the orderly transition to digital television by consumers in February 2009.

In order to protect WMTS operations in channel 37, GEHC has recommended that no new white space devices be permitted to operate in channels 36 or 38 or, that in the

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[1] *See, e.g.,* Comments of GE Healthcare, ET Docket Nos. 04-186 and 02-380 (Jan. 31, 2007) ("GEHC Jan. 2007 Comments"); *Ex Parte* filing of GE Healthcare, ET Docket Nos. 04-186 and 02-380 (Aug. 27, 2007); *Ex Parte* Letter of GE Healthcare, ET Docket Nos. 04-186 and 02-380 (Jan. 9, 2008) ("GEHC Jan. 2008 *Ex Parte*").

[2] *Amendment of Parts 2 and 95 of the Commission's Rules to Create a Wireless Medical Telemetry Service,* Report and Order, 15 FCC Rcd 11206 (2000) at ¶ 59.

alternative, the use of these channels be limited to professionally installed "fixed/access" devices.[3] Such a restriction would serve to protect medical telemetry from harmful interference caused by adjacent channel overloading,[4] and would also serve to reduce the likelihood of co-channel interference due to white space device out-of-band spurious emissions falling into channel 37.[5]

However, in the event that the Commission ultimately decides to allow new portable white space devices to operate on an unlicensed basis, it will be necessary to limit device emissions, both fundamental and spurious, in channels 36 and 38 to reduce the likelihood of overloading sensitive medical telemetry receivers. Toward that end, GEHC hereby proposes a portable device emissions mask for channels 36-38 that addresses adjacent channel overload as well as channel 37 spurious emission interference. A graphic illustration of the mask is attached as Exhibit A.

Band		Max field Strength
f_1 [MHz]	f_2 [MHz]	[dBμV/m/120kHz @ 1m]
602	607	120 – 5(f – 602MHz)
607	608	95
608	614	30
614	615	95
615	620	120 – 5(620MHz – f)

It is important to note that in determining these emissions limits GEHC has assumed that a large number of devices would not be transmitting simultaneously in channels 36 and 38. Therefore, should the Commission elect to adopt such a mask and to permit unlicensed portable device operations in channels 36 and 38, GEHC further proposes that the rules require devices to select with equal likelihood from all available channels. This would avoid the unintended consequence of encouraging lower power devices to congregate in channels 36 and 38, as GEHC anticipates that the majority of portable devices would ultimately be designed with a maximum transmit power lower than the currently proposed 100 mW limit.[6]

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[3] GEHC Jan. 2007 Comments at 9; *see also* GEHC Jan. 2008 Ex Parte at 1.

[4] Medical telemetry receivers are designed to receive very low power telemetry signals and may be highly sensitive to strong signals in adjacent TV channels. Although receivers may be "hardened" on a case-by-case basis when strong broadcast TV signals are known to be present in channels 36 and 38, this typically increases system cost and/or reduces system capacity. Proposed portable white space devices, when carried into hospitals, would present unexpected strong signals to systems that have not been specifically hardened to withstand them.

[5] GEHC, NAB, MSTV, IEEE 802 and Motorola have all stated in comments filed in this proceeding that the currently proposed 200 uV/m @ 3m spurious emissions limit is inadequate to protect incumbent operations if such emissions are allowed to fall co-channel to incumbent operations.

[6] For example, Class 3 and Class 2 802.15.1 Bluetooth devices (the most common classes) achieve typical ranges of 1 meter and 10 meters while operating at 2.4 GHz with transmit powers of only 1 mW and 2.5 mW, respectively. Considering the significantly better propagation characteristics at 600 MHz relative to 2.4 GHz, and practical design constraints including battery life, electronic circuit complexity, size and cost,

Respectfully submitted,

Tim Kottak
Engineering General Manager
Monitoring Solutions
GE Healthcare
8200 W. Tower Avenue
Milwaukee, WI 53223

Neal Seidl
Wireless System Architect
Monitoring Solutions
GE Healthcare
8200 W. Tower Avenue
Milwaukee, WI 53223

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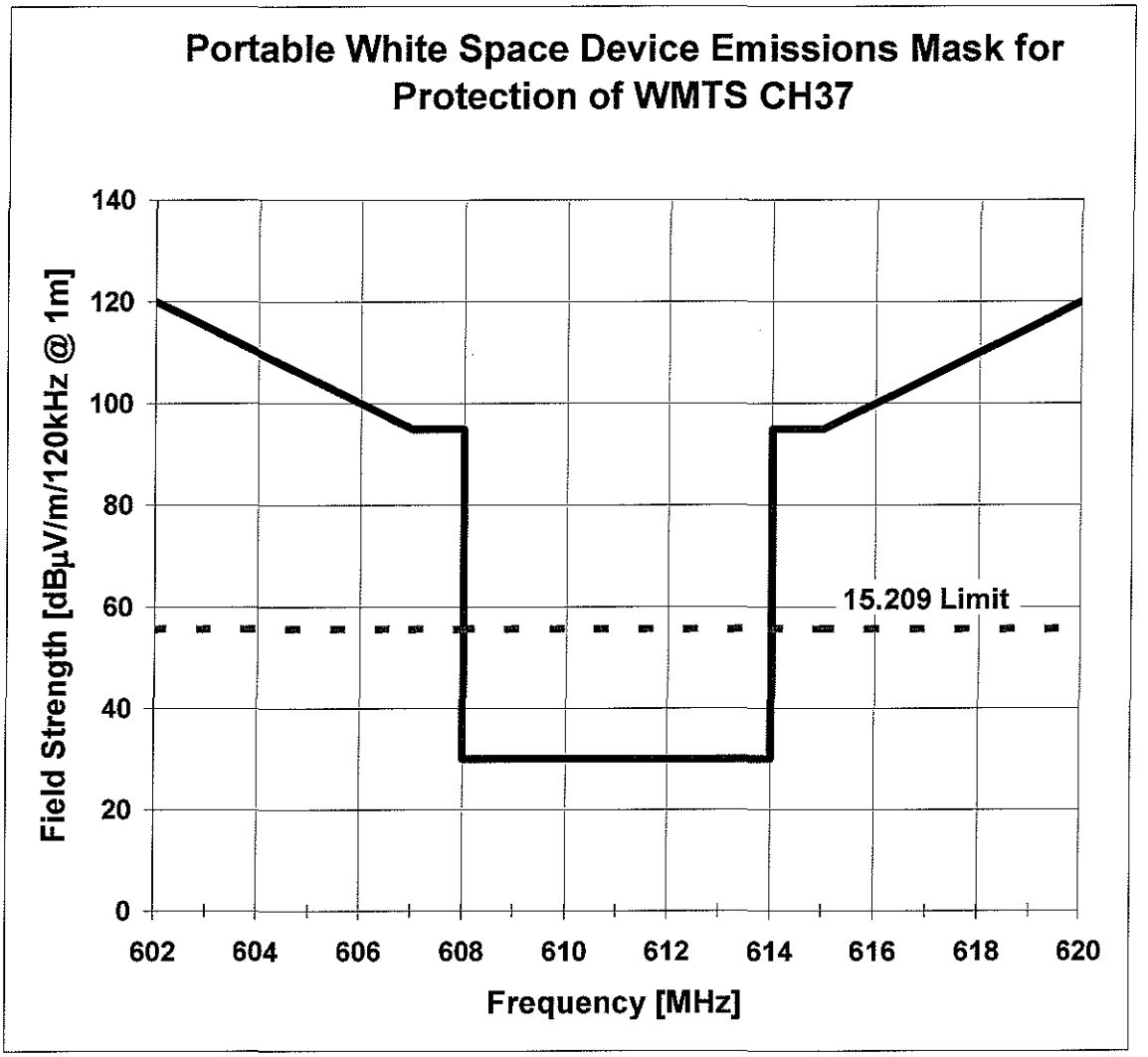
it seems likely that most personal/portable devices will be designed to operate at significantly less than 100 mW maximum.

EXHIBIT A


Portable White Space Device Emissions Mask for Protection of WMTS CH37
Field Strength [dBµV/m/120kHz @ 1m]
140
120
100
80
60
40
20
0
602
604
606
608
610
612
614
616
618
620
Frequency [MHz]
15.209 Limit