

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Amendment of Part 2 and 95 of the) ET Docket No. 09-36
Commission's Rules to Provide Additional)
Spectrum for the Medical Device)
Radiocommunication Service in the)
413-457 MHz Band)

To: The Commission

Reply Comments of the Society of Broadcast Engineers, Incorporated

The Society of Broadcast Engineers, Incorporated (SBE), the national association of broadcast engineers and technical communications professionals, with more than 5,000 members world wide, hereby respectfully submits its reply comments in the above-captioned Notice of Proposed Rulemaking relating to Medical Micro-Power Network (MMN) devices at 413-457 MHz.

I. SBE Agrees with Concerns Raised by APCO, LMCC and MSTV

1. SBE agrees with the comments filed by the Association of Public-Safety Communications Officials-International, Inc. (APCO), by the Land Mobile Communications Council (LMCC), and by the Association for Maximum Service Television, Inc. (MSTV), that this is a flawed proposed allocation, and would subject MMN device users to harmful, and perhaps dangerous, interference from much higher power co-channel signals. This is especially the case for the proposed 451-457 MHz allotment, which would be co-channel with 455-456 MHz Part 74 Subpart D Remote Pickup (RPU) stations.
2. The comments of the proponent, the Alfred Mann Foundation (AMF), again claimed that "redundant coding" would ensure that implanted medical devices (IMDs) do not suffer

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interference from much higher power stations, no technical details regarding the effectiveness of such redundant coding has been provided by AMF.

3. While an external MMN controller device may have room for the signal processing circuits that a redundant-coding interference avoidance scheme would require, it is not clear that a device so small as to be implantable could have such redundant coding circuitry, or be able to support the power draw that such signal processing would undoubtedly require. Thus, SBE is not persuaded that unspecified redundant coding would protect MMN devices from debilitating co-channel interference from much higher power RPU stations operating at 455–456 MHz, and the Commission should not proceed absent a further showing on this subject. Furthermore, the AMF devices are but one example of devices that might operate pursuant to the rules proposed in the Notice. Redundant coding should be required for all devices authorized under any rules adopted in this proceeding

4. It is notable that at Page 7 of the AMF comments, AMF offers as the reason why the 470–698 MHz UHF TV band is unsuitable for MMN devices that it is "occupied by high-power UHF TV transmitters, thus rendering the RF environment highly challenging for MMNs." This indicates that AMF's redundant coding is in fact unable to reject co-channel undesired signals. Furthermore, the same argument applies to RPU operations in portions of the 450-456 MHz band. RPU systems generally use antennas far closer to ground levels and as a result closer to the wearer of the implant in a horizontal plane. As to power density, a single 100-watt station using a 25 kHz emission yields a 4 mW/Hz ratio. A megawatt ERP DTV station yields 160 mW/Hz. A 100-watt emission on a 12.5 kHz channel yields 80 mW/Hz. The present FCC rules in Part 74 and Part 90 now require new operations at the narrower bandwidth, higher density channels. This results in greater exposure to co- and adjacent-channel interference due to the effective

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doubling of potential users in a given slice of the spectrum. Patients exposed unpredictably and uncontrollably to RPU operation in a given location would be subject to interference potentials and an RF environment approximating that created by the “high power UHF transmitters” that AMF admits are a highly challenging environment for MMNs.

II. Summary

5. Allocating 451–457 MHz for MMN devices would constitute inappropriate spectrum management, and the proposed rules should not be adopted. An allotment for medical application purposes on a secondary basis in this band serves neither medical patients nor broadcast audiences well and other spectrum should be considered instead.

Respectfully submitted,

SOCIETY OF BROADCAST ENGINEERS, INC.

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General Counsel

September 10, 2009

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