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J. Thomas Nolan
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jnolan@shb.com

September 14, 1999

John Reed
Office of Engineering and Technology
Federal Communications Commission
445 12th Street, S.W.
Room 7-A140
Washington, D.C. 20554

Re: Wanderguard Wristband Transmitter
FCC ID LA5SWSD005
EA 94546

Dear John:

Thank you for agreeing to review the history of this device. I have attached the relevant documents to this letter.

As you will see, on January 27, 1993, the Commission granted a waiver of Section 15.37(a) of the Commission's Rules to allow the manufacture of the device, which transmits at 506 kHz, then within the restricted frequency band of 490-510 kHz. (See Att. 6) The waiver was based on

- the extremely low emission levels produced by the device (the field strength is 12.7 dB below the worst-case emission limit);
- the diminished need for protection of the 490-510 kHz band because of the phase-out of maritime distress equipment operating at 500 kHz;
- the anticipated rule change in February, 1999 which would remove 506 kHz, the center frequency of the device, from the restricted band.

Subsequently, on December 1, 1993, we sought and obtained confirmation that the January 27, 1993 waiver would apply to modifications to the device as long as the modified device was properly certified. (See Att. 7 and 8)

The Commission has, accordingly, continued to grant equipment certifications for modifications to the wristband transmitter subject to the conditions listed in the January 27, 1993 waiver. Copies of several of these authorizations are included. (See Att. 9 and 10)

In February 1999, the restricted band was reduced to 495-505 kHz. That change reflects the complete phase-out of the use of 500 kHz equipment for use in maritime distress signaling, and the consequential elimination of any need to protect that band. The device continues to radiate some energy into the restricted band; however, its fundamental frequency of 506 kHz no longer lies within the restricted band, and it radiates less energy into the restricted band than before the February, 1999 rule change went into effect.

The present application is not substantively different from the other certifications that were granted pursuant to the January 27, 1993 waiver. The waiver states "the emission limits and conditions under which your device must operate should be sufficient to preclude harmful interference prior to February 1, 1999." It seems the height of unfairness to deny this application based on radiation into the new restricted band when (a) the device was found not to interfere with operations in the restricted band *before* February 1, 1999; (b) the device transmits even *less* radiation into the restricted band *after* February 1, 1999; and (c) the need for the restricted band has diminished or been eliminated altogether.

Thank you for your attention to this matter. If you have any questions, please do not hesitate to contact me.

Sincerely,

J. Thomas Nolan

JTN/kd

Enclosures

cc: Julius Knapp
Greg Czumak
Edwin N. Lavergne, Esq.

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November 11, 1999

John Reed
Office of Engineering and Technology
Federal Communications Commission
445 12th Street, S.W.
Room 7-A140
Washington, D.C. 20554

Re: Wanderguard Wristband Transmitter
FCC ID LA5SWSD005

Dear John:

This letter is a follow-up to my letter of September 14, 1999, which discussed the above-referenced application for certification in light of the certification history of this device. As you will recall, the Commission granted Senior Technologies a waiver of Section 15.37(a) (governing radiated emissions into the restricted bands) on January 27, 1993 to allow the manufacture of this device, which transmits a very low power signal at a fundamental frequency of 506 kHz. Copies of the waiver letter and subsequent correspondence are included as Attachment 1 hereto.[1] The FCC has previously interpreted this waiver as applying to subsequent versions of this device, and not as solely applicable to the initial grant of authorization. Attachment 2 contains copies of six equipment authorizations granted pursuant to the January 27, 1993 waiver, dated between 1994 and 1998.

Our previous discussions with you revealed that the test report submitted with the most recent application for certification (dated June 11, 1999) had depicted an unexpectedly high level of radiated emission as compared to previous devices authorized pursuant to the January 27, 1993 waiver. Since these test results were completely unexpected, the company requested that the testing laboratory re-test this device. A copy of the new test report (dated October 29, 1999) is included as Attachment 5.

1. On December 1, 1993, the Commission confirmed that the January 27, 1993 waiver would apply to modifications to the device as long as the device was properly certified. *See* Attachment 1.

The new test report demonstrates that the device for which certification is sought actually radiates *less* power into the restricted band than other devices previously certified by the Commission pursuant to the January 27, 1993 waiver. A brief summary is tabulated below. Copies of the full test reports from which the summarized data was derived are appended as Attachments 3 through 5.

Date of Test Report	FCC ID	Calculated Field Strength at 506 kHz (dBuV/m @ 30m)	Section 15.209 Field Strength Limit at Radiated Frequency (dBuV/m @ 30m)
10/29/99 (Att. 5)	LA5SWSD005	-29.7	47.4
2/27/98 (Att. 4)	LA5WERB001	6.9[2]	47.4
2/27/96 (Att. 3)	LA5LWSD003	-1.4	47.4

The latest calculation of field strength in the October 29, 1999 test report was based on measurements taken at 1, 1.5, and 3 meters extrapolated to 30 meters and should be highly reliable. See Attachment 5 at page 10.

The rule changes effective February 1, 1999 removed the fundamental frequency of the device at 506 kHz from the restricted band. However, the device's side lobe still extends into the restricted band at 495-505 kHz. As to these side lobe emissions, the January 27, 1993 waiver is still applicable. In granting that waiver, the Commission found that emissions from the device, *even when the device's fundamental frequency was within the restricted band*, would not pose a risk of harm to operations in the restricted band. The October 29, 1999 test report demonstrates that the

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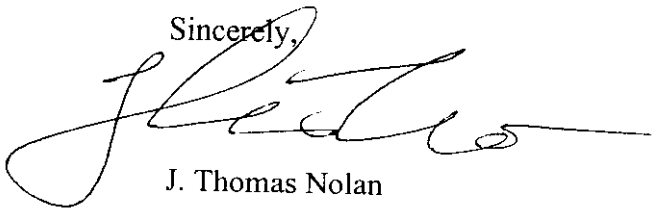
2. The statement on page 6 of this test report that "the worst-case emission level is 6.9 dBuV/m @ 3 m" appears to be an error. At page 7, the test report indicates that the received signal level at 3 meters was 46.9 dBuV/m, which was extrapolated to 30 meters (using a factor of 40 dB per decade) to arrive at the calculated value of 6.9 dBuV/m at 30 meters. Moreover, the test report compared the figure of 6.9 dBuV/m against the permitted value of 47.4 dBuV/m taken from Section 15.209. Assuming that it compared apples to apples, both figures must have been measured at 30 meters. *See* Attachment 4, at pages 6-7.

new device radiates below the level of devices that have been authorized pursuant to that waiver. The fact that the restricted band has been narrowed as a result of replacement of 500 kHz maritime safety equipment with GMDSS equipment should only weigh in favor of the continued applicability of the January 27, 1993 waiver to new equipment authorizations.

Thank you for your attention to this matter. Please contact me with any further questions regarding this submission.

Sincerely,



J. Thomas Nolan

JTN/kd

Enclosures

cc: Julius Knapp
Greg Czumak
Edwin N. Lavergne, Esq.
John Brasch
Marvin Jacques

CONFIDENTIAL

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

27 JAN 1993

IN REPLY REFER TO:
31030/EQU/6-3

Mr. Edwin N. Lavergne
Ginsburg, Feldman, and Bress
1250 Connecticut Avenue, N.W.
Washington, DC 20036

Dear Mr. Lavergne:

I am hereby granting your Petition for Waiver, filed on May 6, 1992, on behalf of Senior Technologies, Inc., d/b/a WanderGuard, subject to certain conditions specified below.

Your petition asks that the Commission grant WanderGuard a waiver of Section 15.37(a) of the Commission's rules, which prohibits the manufacture and importation of certain low power intentional radiators after June 23, 1994. You state that a waiver is needed so that WanderGuard may continue to manufacture wristband transmitters, operating at 506 kHz, that are worn by nursing home residents who may have a tendency to wander off the premises. You indicate that the extremely low field strength of the WanderGuard transmitter could not realistically interfere with other communications services. Additionally, you state that a waiver is justified because of the diminishing need to restrict emissions in the 490-510 kHz band. Lastly, you state that failure to grant a waiver would impose a substantial financial burden on WanderGuard and its customers without any public benefit.

The Commission has established frequency bands within which Part 15 transmitters, or intentional radiators, are prohibited from operating.[1] These restricted bands were established to protect against interference to services involving safety-of-life and services that use very low received signal levels.[2] These restricted bands include a band at 490-510 kHz, which is designated as a guardband for maritime distress communications on 500 kHz. However, the current maritime distress system is being replaced with the Global Maritime Distress and Safety System (GMDSS). On July 22, 1992 the Commission proposed to reduce the width of the existing restricted frequency band of 490-510 kHz to 495-505 kHz, effective February 1, 1999, when the GMDSS is fully implemented.[3]

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1 See 47 CFR Section 15.205. Within the restricted frequency bands, Part 15 transmitters are permitted to radiate only spurious emissions.

2 See First Report and Order, GEN Docket No. 87-389, 4 FCC Rcd 3493 (1989), at para. 61-74. See, also, Memorandum, Opinion and Order, GEN Docket No. 87-389, 6 FCC Rcd 5405 (1991), at para. 14-17.

3 See Notice of Proposed Rule Making, ET Docket No. 92-165, released August 12, 1992, FCC 92-340.

The Commission adopted new Part 15 rules in 1989. Section 15.37(c) allows Part 15 devices, such as WanderGuard's, that comply with the regulations in effect prior to June 23, 1989, to be operated and marketed indefinitely. These devices may not, however, be manufactured or imported after June 23, 1994.

Tests conducted by the United States Coast Guard, the primary user of the 490-510 kHz band, apparently confirm that the WanderGuard device does not pose a serious threat to maritime distress communications.[4] The Coast Guard expressed concern about the potential aggregate interference effects of these devices, but believed that such aggregate interference could be avoided with operational constraints. In addition, the WanderGuard device has been operating since 1985, without any reported instances of harmful interference.

Based on the information that you have provided, it appears that there is little risk of harmful interference from the WanderGuard device. Moreover, the Commission has already proposed to eliminate from the restricted band the frequency band in which your device operates, effective February 1, 1999. In addition, the emission limits and conditions under which your device must operate should be sufficient to preclude harmful interference prior to February 1, 1999. Therefore, under the authority contained in Sections 0.31 and 0.241 of the regulations, a waiver of the manufacture and importation prohibition specified in Section 15.37(a) is issued to Senior Technologies, Inc. for its WanderGuard device. This waiver is subject to the following conditions, which were proposed by the Coast Guard and which your petition indicates are acceptable:

1. The sale and operation of these devices must be restricted to the health care industry.

2. Operation of these devices must be restricted to areas at least one kilometer from coast stations maintaining a distress watch on 500 kHz.

3. Operation of these devices must be restricted from all ocean-going vessels.

4. A label, in addition to other Commission labeling requirements, must be included with each WanderGuard system warning the purchaser that "the wristband unit transmits in the protected guardband for a maritime distress channel. Harmful interference to communications on that channel is prohibited."

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[4] See letter from Joseph D. Hersey, Jr., Chief, Maritime radio and Spectrum Management Division, United States Coast Guard to Jay S. Newman, Esquire, dated April 30, 1992, submitted as Exhibit C to your petition.

It should also be noted that the WanderGuard equipment must comply with all other Commission regulations, including the non-interference requirements of Section 15.5 and the equipment authorization requirements of Subpart J.[5]

If you have any questions concerning this waiver, please contact Mr. George Harenberg of our Technical Standards Branch at (202) 653-7314.

Sincerely,

Thomas P. Stanley
Chief Engineer

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[5] Effective June 23, 1994, the WanderGuard device will be required to obtain certification under the FCC's equipment authorization program. See the equipment certification requirements contained in Sections 2.1031 through 2.1065 of the Commission's rules.

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

DEC 1 1993

IN REPLY REFER TO:
31030/EQU/4-2-4
1300B4

Mr. Jay S. Newman
Ginsburg, Feldman and Bress
1250 Connecticut Avenue, N.W.
Washington, DC 20036

Dear Mr. Newman:

This is in reply to your letter of November 12, 1993, regarding changes to the transmitter produced by WanderGuard, Inc.

As indicated in your letter, the WanderGuard transmitter operates at 506 kHz under Part 15 of our regulations. Since this transmitter was authorized under the former regulations, i.e., the Part 15 rules that were in effect prior to June 23, 1989, the manufacture and importation of this transmitter would be required to cease prior to June 23, 1994, in accordance with Section 15.37(a).

On January 27, 1993, WanderGuard was issued a waiver of Section 15.37(a), permitting manufacture and importation to continue for an unspecified period. Under the provisions of this waiver, WanderGuard must obtain a grant of certification from the Commission prior to June 23, 1994. Certification would be granted based on a demonstration of compliance with the current regulations, excluding the prohibition in Section 15.205 against operation in the band 490-510 kHz. Other provisions pertaining to the sale, operation and labelling of the WanderGuard transmitter were detailed in our waiver letter.

You indicate that WanderGuard wishes to modify its circuitry to improve transmitter stability. As shown in Section 2.1043(a), this modification to the basic frequency determining and stabilizing circuitry would require a new application for, and grant of, certification. The waiver originally issued to WanderGuard allowing operation at 506 kHz will continue to apply to this new transmitter under the same conditions described in our letter of January 27, 1993.

I trust that the above responds to your inquiry. Additional questions should be directed to John Reed, 1300B4, at the address on the letterhead or at (202) 653-7313.

Sincerely,

Richard B. Engelman
Chief, Technical Standards Branch
Office of Engineering and Technology