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VIA HAND DELIVERY AND ELECTRONIC FILING

May 17, 2019

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th St. SW
Washington, D.C. 20554

Terry G. Mahn
Principal
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Re: Corrected Petition to Modify Waiver of Part 15 of the Commission's Rules Applicable to
Ultra-Wideband Devices

Dear Ms. Dortch:

Pursuant to Section 1.3 of the rules of the Federal Communications Commission ("Commission"), Proceq USA Inc. ("Proceq") hereby submits for filing the attached corrected version of its Petition to Modify Waiver, a copy of which has also been submitted electronically. This corrected Petition replaces an earlier petition filed December 17, 2018, and withdraws Proceq's request for confidential treatment under Sections 0.457 and 0.459 of the Commission's rules. Please contact me if there are any further questions regarding this matter.

Respectfully submitted,

By: /s/ Terry G. Mahn

Terry G. Mahn

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Counsel to Proceq USA Inc.

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)
)
Proceq USA Inc.)
)
Waiver of Part 15 of the Commission's Rules)
Applicable to Ultra-Wideband Devices)

To: Chief, Office of Engineering and Technology

Corrected Petition to Modify Part 15 Rule Waiver

Note: This Petition to Modify corrects and replaces the Petition to Modify that was filed on December 17, 2018, by removing all earlier requests for confidentiality.

On March 14, 2018, the Commission granted a request by Proceq USA Inc. for a waiver of the Part 15 rules governing unlicensed ultra-wideband (“UWB”) devices to permit the certification and marketing of the Proceq GPR Live ground-penetrating radar (“GPR”) device.¹ The Commission found that the Proceq device, operating under the specified waiver conditions, posed no greater risk of causing harmful interference to communication services than the UWB/GPR devices already permitted under the existing rules and therefore, a grant of the requested waiver would serve the public interest.

Specifically, the Commission’s *Waiver Order* applied to: (1) the “at any point in time” requirement of Section 15.503(d), which requires a UWB device to have a fractional bandwidth

¹ *Proceq USA Inc. Request for Waiver of Part 15 of the Commission’s Rules Applicable to Ultra-Wideband Devices*, Order, DA 18-251 (rel. March 14, 2018) (“*Waiver Order*”). See also 47 C.F.R §§ 15.503(d), 15.31(c), 15.521(d).

equal to or greater than 0.20 or a UWB bandwidth equal to or greater than 500 MHz; and (2) the requirements in Sections 15.31(c) and 15.521(d), which direct that the emissions from the device are to be measured with the transmitter operating with the stepping function stopped. The Commission waived these rules to allow a stepped-frequency CW-modulated transmitter operating between 200 MHz and 4000 MHz to qualify as a UWB/GPR device and to permit such a device to be measured for compliance with the stepping function active. In addition, the *Waiver Order* imposed the following conditions based on the specific technical design of the waived device:

- The device shall operate with stepped frequency CW modulation in 10, 20, or 40 megahertz steps between 200 and 4000 MHz.
- The device dwell time on any one frequency shall not exceed 2 microseconds.
- The dwell time during any step shall not exceed 0.04 percent of the device's minimum scan/cycle rate.
- The device will comply with all other technical and operational requirements applicable to UWB GPR devices under Part 15, Subpart F of the Commission's rules.
- The entities permitted to operate the Proceq GPR device are limited to those specified in Section 15.509(b) of the Commission's rules.
- The conditions established for this waiver are not applicable to mass marketed UWB GPR devices where further analysis would be necessary to assess the potential impact to authorized users.²

In the 14 months since Proceq first submitted its waiver request to the Commission, development has been ongoing on a new GPR product, which improves upon the technical design of Proceq GPR Live. Although the technical change is minor, it falls outside the strict operating conditions set forth in the *Waiver Order*. Nonetheless, the change poses no greater risk of causing harmful interference to communication services than the original Proceq GPR Live device or

² *Waiver Order* at 4.

other UWB devices permitted under the existing rules and thus, a grant of this Petition will serve the public interest.

Proceq submits that these modifications to its waived device can be granted by the Chief of the Office of Engineering and Technology (“OET”) under its general delegation of authority.³ In addition, Proceq requests, as it did with its initial waiver request, that this Petition not be put on public notice to avoid the months of unnecessary delays that will result from the repetitious industry filings that accompany all such UWB waiver requests, even as to regulatory matters that have long been resolved.

Introduction

Proceq SA is a leading Swiss provider of advanced material testing solutions used and relied upon by many industries throughout the world. The company is known globally as an innovative manufacturer of products that enable the non-destructive testing (“NDT”) of materials such as concrete, metal, rock and composites. Proceq’s NDT devices provide industrial users with data that is critical to evaluating and improving the safety, durability and sustainability of materials used in their businesses, as well as to ensuring the structural integrity of infrastructure and safety to the public.

The Proceq GPR Live device has been a commercial success in U.S. and in the international markets where it is sold. The device relies on stepped-frequency CW modulation to suppress RF interference from other sources (e.g., WiFi, GSM, etc.) that often impede conventional GPR performance. The stepped-frequency design also provides better power density control across the operating bandwidth and allows for more simplified electronics in

³ See 47 C.F.R. § 0.241.

terms of pulse generation and sampling and optimal power consumption. In short, the technical design of Proceq GPR Live provides numerous benefits over conventional impulse GPR to the industries that rely on these technologies.

In an effort to address customer needs in new applications through improved product performance, the technical design of the Proceq GPR Live device was modified to increase the operating bandwidth. Preliminary EMC testing in accordance with the *Waiver Order* has confirmed that the new GPR device will meet the technical requirements set forth in Sections 15.509 and 15.521 of the Commission's rules.

The Modification to the Proceq Device is Minor and does not Require Any New Rule Waivers

The new GPR device by Proceq does not require any changes to the *Waiver Order* in terms of the specific rules that have been waived by the Commission. The new device will continue to comply with the *Waiver Order* as it applies to Sections 15.503(d), 15.31(c) and 15.521(d) of the rules. As noted, the only change relative to the waived device involves an increase in the range of operations. More specifically, the new device with the modified technical design will feature the same stepped-frequency CW modulation as the original Proceq GPR Live device but will now operate between 200 MHz and 6000 MHz – an expansion in the upper end of the operating range of 2000 MHz. This expanded upper bandwidth limit is still well below the 10.6 GHz upper limit set forth in Section 15.509(a) for GPR devices and thus, should not raise any regulatory concerns.

This Petition Should be granted by the Chief Engineer Under Delegated Authority

The Commission has analyzed and granted waivers for UWB devices that operate very similarly to the original waived and the newly modified Proceq devices. It has consistently ruled that stepped-frequency transmitters operating over at least 500 MHz of spectrum are no

more likely to cause harmful interference to communications services than conventional impulse UWB devices⁴ even when tested with the stepping function active.⁵ In each case, the Commission also imposed various operating conditions that tracked the technical features of the device, thereby rendering each waiver unique to a particular product. If one or more of these technical features were to change, even minimally, the waiver conditions could not be met and the device manufacturer would be required to seek Commission approval to implement the new features.

This is the situation faced by Proceq, with the new GPR device based on the technical design of the original waived Proceq GPR Live device; a minor, evolutionary technical change has been made that falls outside the strict requirements of *Waiver Order* and, therefore, must be approved by the Commission. Proceq submits, however, that it cannot be an efficient expenditure of Commission resources to review and approve minor technical changes to the technical design of a waived device that have little or no impact on the interference concerns addressed in the initial waiver grant. Instead, it makes more sense for these types of changes to be handled by the OET Chief under its general delegation of authority.

Section 0.241 of the Commission's rules sets forth the scope of the OET Chief's authority to act on behalf of the Commission, which includes the administration of the Part 2 and Part 15 rules and the equipment authorization program. The OET Chief is required to refer waiver requests to the Commission *en banc* when such requests "contain new or novel arguments not

⁴ See, e.g., *Curtiss-Wright Controls, Inc. Request for Waiver of Part 15 of the Commission's Rules Applicable to Ultra-Wideband Devices*, ET Docket No. 10-167, Order, 27 FCC Rcd 234 (2012); see also *Kyma Medical Technologies Ltd. Request for Waiver of Part 15 of the Commission's Rules Applicable to Ultra-Wideband Devices*, ET Docket No. 15-119, Order, 31 FCC Rcd 9705 (2016).

⁵ See *Petition for Waiver of the Part 15 UWB Regulations Filed by the Multi-band OFDM Alliance Special Interest Group*, ET Docket No. 04-352, Order, 20 FCC Rcd 5528 (2005). See also *Petition for Waiver of the Part 15 UWB Regulations Filed by Multi-band OFDM Alliance Special Interest Group*, ET Docket No. 04-352, Third Memorandum Opinion and Order and Memorandum Opinion and Order, 25 FCC Rcd 11390 (2010) (denying petitions requesting reconsideration of the Commission's decision to permit UWB devices to be measured in normal transmission mode).

previously considered by the Commission or present facts or arguments which appear to justify a change in Commission policy.”⁶ Here, there are no new or novel facts or arguments that involve a change in Commission policy. Indeed, the only new “facts” are a minor change made to the technical design of the Proceq GPR Live device that does not impact device operations or raise new interference concerns. Proceq has preliminarily tested the new device for compliance under the rules and can confirm that it was shown to be compliant with UWB/GPR emission limits. Thus, Proceq asserts that there is no pressing public interest served in soliciting comments on this Petition, as a public comment period will serve only to delay the approval and marketing of a device whose minor technical modifications raise no new regulatory concerns.

Conclusion

Based on the foregoing, Proceq respectfully submits that a grant of this Petition will serve the public interest and should be granted expeditiously by the Chief of OET.

Respectfully submitted,

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⁶ No party opposed the Kyma waiver request, and several parties filed in support of it. One party encouraged the Commission to obtain additional technical information from Kyma, which Kyma supplied. While several parties supported the Curtiss-Wright waiver request, two parties opposed it. The Commission evaluated those oppositions in detail and found that they were without merit. *See also* 47 C.F.R. § 0.241.