

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554**

In the Matter of	)	
	)	
Amendment of Part 15 of the	)	
Commission’s Rules To Establish	)	ET Docket No. 10-23
Regulations for Tank Level Probing Radars	)	
in the Frequency Band 77-81 GHz	)	
	)	
and	)	
	)	
Amendment of Part 15 of the	)	
Commission’s Rules To Establish	)	
Regulations for Level Probing Radars and	)	
Tank Level Probing Radars in the	)	
Frequency Bands 5.925-7.250 GHz, 24.05-	)	
29.00 GHz and 75-85 GHz	)	

**REPLY COMMENTS OF HACH COMPANY**

Hach Company (“Hach”), on behalf of itself and its affiliate, OTT Hydromet GmbH (“OTT”), submits this reply to comments filed in response to the Commission’s Further Notice of Proposed Rulemaking regarding the adoption of Part 15 rules to permit unlicensed operation of level probing radars in the above-referenced docket.<sup>1</sup> The focus of this reply is to clarify Hach’s proposal regarding the adoption of distinct limits for harmonic emissions and other unwanted emissions from Level Probing Radars (“LPRs”).

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<sup>1</sup> See Comments of Hach Company, ET Docket No. 10-23 (filed May 30, 2012) (“Hach Comments”); see also *Amendment of Part 15 of the Commission’s Rules To Establish Regulations for Tank Level Probing Radars in the Frequency Band 77-81 GHz, and Amendment of Part 15 of the Commission’s Rules To Establish Regulations for Level Probing Radars and Tank Level Probing Radars in the Frequency Bands 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz*, ET Docket No. 10-23, Further Notice of Proposed Rulemaking, FCC 12-34 (rel. Mar. 27, 2012) (“*Further Notice*”).

As an initial matter, the public interest benefits of LPR devices are well established in the record.<sup>2</sup> Notably, there is broad support in the industry for conforming the U.S. and European standards to enable U.S. users of LPRs to obtain the cost benefits associated with the increased economies of scale that would arise from the manufacture of devices that can be sold in a broader market.<sup>3</sup> Thus, the proposal in the Hach Comments to adopt distinct limits for harmonic emissions and other unwanted emissions in a manner that is consistent with the limits in the ETSI standard is in the public interest.

In the Hach Comments, Hach proposed to limit harmonic emissions to a mean power spectral density (average value) of 20 dB below the fundamental emission to bring the Commission's LPR rule in line with the ETSI standard.<sup>4</sup> For purposes of clarification, Hach's proposal for the harmonic emission limit was intended to apply only to LPR devices operating in the 24.05-29.00 GHz range.<sup>5</sup> Further, Hach proposes that the unwanted non-harmonic emissions from LPRs should be subject to the general emission limits in Section 15.209, consistent with the Commission's limits in Sections 15.245 and 15.249, which specify a distinct emission limit for harmonics.<sup>6</sup>

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<sup>2</sup> See e.g., Comments of High Sierra Electronics, ET Docket No. 10-23 (filed May 30, 2012); Comments of YSI Incorporated, ET Docket No. 10-23, at 3 (filed May 30, 2012); *Further Notice* at ¶ 2.

<sup>3</sup> See e.g., Comments of Measurement, Control & Automation Association, ET Docket No. 10-23, at 2 (filed May 30, 2012).

<sup>4</sup> Hach Comments at 8.

<sup>5</sup> The reference to Section 15.252 in the Hach Comments was intended to illustrate that not all unwanted emissions were subject to the Section 15.209 limits and that transmissions in frequencies above 29 GHz are permitted to be 20 dB below the limit in the 24-29 GHz range. See 47 C.F.R. § 15.252(b)(2). However, as discussed in this reply, the distinct limits for harmonic emissions in Sections 15.245 and 15.249 provide a better illustration of Hach's proposal.

<sup>6</sup> See 47 C.F.R. §§ 15.245(b), 15.249(a).

Although Hach's proposed limit for harmonics emitted by LPRs operating in the 24.05-29.00 GHz band is higher than the general emissions limit in Section 15.209, these emissions (like the fundamental emissions) will be directed toward the ground and will be located in remote areas. The emissions from LPRs outside the main antenna beam are inherently very low and will not propagate over long distances. Moreover, given the remoteness of the installation sites, the likelihood of harmful interference from any harmonic emissions is extremely low.

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Hach urges the Commission to adopt the proposed rules in the *Further Notice* to permit the unlicensed operation of LPR devices for outdoor use, subject to the technical clarifications and proposals in the foregoing and in the Hach Comments. Hach's proposals, as clarified in this reply, will provide certainty to all LPR industry participants regarding the technical requirements and will enable users of LPRs in the U.S. to benefit from the economies of scale resulting from the manufacture of devices for sale in a broader global market.

Respectfully submitted,

/s/

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