

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

In the Matter of )
)
Modification of December 19, 2023, Order ) ET Docket No. 22-382
Continental Automotive Systems, Inc. and )
Continental Automotive GmbH Order for )
Waiver of Section 15.231(e) of the )
Commission's Rules )

ORDER

Adopted: October 11, 2024

Released: October 11, 2024

By the Chief, Office of Engineering and Technology:

1. By this Order, we find that there is good cause to modify our December 19, 2023, Order (Waiver Order) that granted Continental Automotive GmbH (Continental) a limited waiver of the Commission's part 15 rules. Specifically, the Waiver Order waived Section 15.231(e) of the Commission's rules to permit the marketing and operation of Continental's TPMS sensor that is designed to use the 315 MHz and 433MHz bands to monitor the pressure inside of a vehicle's tires and warn drivers of low-pressure conditions, potentially avoiding a blowout or other tire malfunction.1 The Waiver Order included multiple conditions to limit the potential for harmful interference from Continental's devices to incumbent users while still allowing for its deployment in vehicular applications.2 In this current Order, we modify two waiver conditions and include a new waiver condition that requires Continental's device to minimize the amount of time that the device needs to complete the drive cycle calibration and permits shorter silent periods between transmissions for shorter drive cycles that occur prior to the full calibration of Continental's TPMS sensor.

2. On May 15, 2024, Continental requested we clarify conditions in the Waiver Order that permit the TPMS sensor to operate with more frequent transmissions during the initial calibration of the TPMS sensor.3 Continental makes this request pursuant to Section 1.41 of the Commission's rules.4 Continental states that such clarifications are fully consistent with the Continental Waiver Request and

1 Continental Automotive Systems, Inc. and Continental Automotive GmbH Request for Waiver of Section 15.231(e) of the Commission's Rules, Order, DA 23-1182 (OET Dec. 19, 2023) (Waiver Order).

2 Waiver Order at 6. The conditions included limitations to when and for how long the TPMS would be allowed to operate in a manner that does not strictly conform to the requirements of Section 15.231(e). Specifically, there conditions permit the TPMS to operate with a minimum silent period between transmissions of 6 seconds during the first 144 seconds the vehicle is in motion for the initial five drive cycles that exceed 144 seconds after installation or reset of the TPMS system. Individual transmission during the first five drive cycles after installation or reset of the device were limited to 200 milliseconds.

3 Letter from Alan G. Fishel, Counsel to Continental Automotive Systems, Inc. and Continental Automotive GmbH, ArentFox Schiff LLP, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 22-382, at 1(filed May. 15, 2024) (Continental May 15, 2024 Ex Parte); see also Continental Waiver Order DA 23-1182 at 6. Para 13.

4 Continental May 15, 2024 Ex parte.

that the requested modifying Order will result in no substantive changes to the facts and issues already considered and approved by the Office of Engineering and Technology, and, as such, are in the public interest.<sup>5</sup> We concur and detail our reasoning below.

3. Continental requests three modifications to paragraph 13 of the Waiver Order.<sup>6</sup> First, Continental seeks clarification regarding the second waiver condition that the product to which the Commission refers to is the TPMS sensor.<sup>7</sup> The existing waiver condition omits the term “sensor”.<sup>8</sup> Second, the original Waiver Request included language that explicitly sought a carve out for the operating condition of the device where-by “in the unlikely event that before all five instances referenced above [i.e. in the first proposed waiver condition] occur there is a very short driving trip in which the vehicle is in motion for less than 144 seconds, the transmissions would occur every 6 seconds while the vehicle is in motion during that very short trip as well.”<sup>9</sup> Continental requests that we include an additional waiver condition that specifically accounts for this rare condition. Third, in the Waiver Request, Continental states “the combined length of the RF emissions (not counting the intermittent non-emission pauses) for a single transmission will be less than 200 milliseconds.”<sup>10</sup> However, the Waiver Order uses the language, “not including the intermittent non-transmission pauses.”<sup>11</sup> Continental therefore requests clarification that the operation and transmission sequence permitted in the waiver request are what was the intention of the third condition of the Waiver Order.<sup>12</sup> Specifically, Continental requests that the existing condition 3 should be renumbered as condition 4 and that the first two clauses of this condition be replaced with the following: “The combined length of the RF emissions for an individual transmission period (not counting the intermittent non-emission pauses), during the first five drive cycles after the installation or resetting of the device shall not exceed 200 milliseconds.”<sup>13</sup>

4. We find the modifications requested by Continental will provide additional clarity to the existing Waiver Order. Moreover, we agree with Continental that the revised waiver conditions are consistent with the existing record of the docket – including information Continental previously included in its original request and was subject to public comment – and thus these revisions fall well within the scope of the facts and issues that we had previously considered and approved.

5. We are authorized to grant a waiver under Section 1.3 of the Commission's rules if the petitioner demonstrates good cause for such action.<sup>14</sup> Good cause, in turn, may be found and a waiver granted “where particular facts would make strict compliance inconsistent with the public interest.”<sup>15</sup> To

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<sup>5</sup> Letter from Alan G. Fishel, Counsel to Continental Automotive Systems, Inc. and Continental Automotive GmbH, ArentFox Schiff LLP, to Marlene H. Dortch, Secretary, FCC, ET Docket No. 22-382, at 1 (filed May. 15, 2024) (Continental May 15, 2024 *Ex Parte*).

<sup>6</sup> Continental May 15, 2024 *Ex parte*.

<sup>7</sup> Continental May 15, 2024 *Ex parte*.

<sup>8</sup> Continental May 15, 2024 *Ex Parte* at 2. Waiver Request at 9.

<sup>9</sup> *Request by Continental Automotive systems, Inc. and Continental Automotive GmbH for Waiver of Section 15.231(e) of the Commission’s Rules* (Continental Waiver Request) (filed Aug. 30, 2022), at 9. *See also*, foot note 10. Continental filed its request in INBOX-PART 15 in the Commission’s Electronic Comment Filing System.

<sup>10</sup> Continental Waiver Request at 7.

<sup>11</sup> Waiver Order at 6.

<sup>12</sup> Continental May 15, 2024 *Ex Parte*.

<sup>13</sup> Continental May 15, 2024 *Ex Parte* at 2.

<sup>14</sup> 47 CFR § 1.3. *See also* *ICO Global Communications (Holdings) Limited v. FCC*, 428 F.3d 264 (D.C. Cir. 2005); *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990); *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

<sup>15</sup> *Northeast Cellular*, 897 F.2d at 1166; *see also* *ICO Global Communications*, 428 F.3d at 269 (quoting *Northeast Cellular*); *WAIT Radio*, 418 F.2d at 1157-59.

make this public interest determination, the waiver cannot undermine the purposes of the rule, and there must be a stronger public interest benefit in granting the waiver than in applying the rule.<sup>16</sup>

6. We find that clarifying conditions 2 and 3 and including a new condition to the Waiver Order will continue to meet the waiver standards that we have previously determined. That is, these slight clarifications will not undermine the purpose of the rules relating to periodic operation of intentional radiators within the 40.66-40.77 MHz band and in spectrum bands above 70 MHz, i.e., to prevent harmful interference to authorized services.<sup>17</sup> As previously discussed in the Waiver Order, the likelihood of harmful interference from the TPMS device is extremely low due to a number of factors, including: 1) the time of emissions transmission for the first 144 seconds of operations would be similar to a fully compliant device, 2) the low power level limited by the small cell battery is compliant with our power rules, 3) the emissions are shielded by the tire and the vehicle body and frame, and 4) several conditions that limit how the units may be operated.<sup>18</sup> We agree with Continental that clarifying the conditions of the waiver and explicitly providing for an intermittent drive cycle carve out for a rare event in which the full calibration of the TPMS system is not met within the initial five drive cycles is necessary, because there may be an intermittent drive cycle that is shorter than the 144 seconds needed for the calibration period.<sup>19</sup> We further clarify condition number 3, specifying that the non-emission pauses during a train of emissions, which span the combined length of RF transmissions for a single transmission cycle, align with the original intention of the Waiver Order. This clarification is presented in the conditions below.<sup>20</sup> Taking into consideration the protection afforded by the existing conditions, which are limiting the emissions period of the TPMS sensor to match the emissions period of a device that is fully compliant with our rules, the combined length of the RF emissions for a single transmission period is limited to 200 milliseconds, and a transmission duration during the first 144 seconds of operation that would result in the same 4.65-second transmissions as a device that is fully compliant with our part 15 rules,<sup>21</sup> we conclude that clarifying the intent of the existing conditions and adding an additional condition that explicitly includes a carve out in the rare chance of an intermittent TPMS sensor cycle here will not significantly increase the risk of harmful interference.

7. We also find that modifying the conditions is consistent with our prior determination that this waiver is in the public interest. The Waiver Order noted the significant public interest benefit the TPMS device's promise in the deployment of enhanced tire pressure monitoring systems that comprise a critical and important safety system on vehicles.<sup>22</sup> The Waiver Order also stated that there was a public interest benefit for an innovative sensor that significantly decreased the time for the "learning and localization process," which in turn will warn drivers sooner of under inflated tires.<sup>23</sup> Providing drivers

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<sup>16</sup> See, e.g., *WAIT Radio*, 418 F.2d at 1157 (stating that even though the overall objectives of a general rule have been adjudged to be in the public interest, it is possible that application of the rule to a specific case may not serve the public interest if an applicant's proposal does not undermine the public interest policy served by the rule); *Northeast Cellular*, 897 F.2d at 1166 (stating that in granting a waiver, an agency must explain why deviation from the general rule better serves the public interest than would strict adherence to the rule).

<sup>17</sup> See 47 C.F.R. § 15.231(e).

<sup>18</sup> Waiver Order at 4-5.

<sup>19</sup> See Continental May 15, 2024 *Ex parte* at 2.

<sup>20</sup> See *infra* at para 8.

<sup>21</sup> Waiver Order at 4 fn. 27. The Waiver Order provides calculations comparing a fully compliant device to that of the Continental TPMS sensor. These calculations demonstrate that a fully compliant device would have a total transmission on time of 4.64 seconds and the TPMS sensor would have a total transmission on time of 4.645 seconds when observed over a time period of 144 seconds. Thus, the TPMS sensor would be no more interfering to a potential victim receiver than a device that was fully compliant with Part 15 rules.

<sup>22</sup> Waiver Order at 5.

<sup>23</sup> Waiver Order at 5.

with this increased speed of detection of under inflated tires has the public safety benefit of reducing the number of vehicles that experience catastrophic tire failure and the economic benefits of enabling drivers to operate their vehicles with properly inflated tires and in turn lead to more efficient use of fuel.<sup>24</sup> Allowing the TPMS sensor the opportunity to fully calibrate its electronics even in the rare instance where there is an initial-drive cycle that is shorter than 144 seconds prior to the required five full calibrations cycles, as described in the Waiver Order, will ensure that the TPMS certification is not unnecessarily penalized for drive cycle duration that is under the control of a vehicles driver, which is out of the control of the manufacturer during the certification process. It will also enable Continental to certify and market its TPMS sensor more promptly by removing certain ambiguities in the previous conditions that a certification body may have reservations toward, and thus bring the benefits of this technology to the public sooner.

8. We therefore modify the Waiver Order to clarify and correct conditions 2 and 3; re-number previous condition number 3 as condition number 4; and include a new condition number 3. The modifications to the conditions in the Waiver Order are to read as follows:

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- 2) The Continental TPMS device shall operate with a minimum silent period between transmissions of 6 seconds during the first 144 seconds the vehicle is in motion for the initial five drive cycles that exceed 144 seconds after installation or reset of the Tire Pressure Monitoring System sensor.
- 3) In the rare event that the full calibration is not met within the initial five drive cycles (because there may be an intermittent drive cycle that is shorter than 144 seconds), the TPMS sensor may still operate with a minimum silent period between transmissions of 6 seconds during the shorter drive cycles until such a time that the five full calibration cycles are met.
- 4) The combined length of the RF emissions for an individual transmission period (not counting the intermittent non-emission pauses), during the first five drive cycles after the installation or resetting of the device, shall not exceed 200 milliseconds. ”

9. Accordingly, pursuant to authority delegated in Sections 0.31 and 0.241 of the Commission's rules, 47 CFR §§ 0.31, 0.241, and Section 1.3 of the Commission's rules, 47 CFR § 1.3, IT IS ORDERED that Continental's May 15, 2024 request to clarify the scope of condition 2 and 3 from OET's December 19, 2023, Waiver Order IS GRANTED consistent with the terms of this Order. This action is taken pursuant to Sections 4(i), 302, 303(e), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154(i), 302, 303(e), and 303(r). This action is effective upon release of this Order.

10. IT IS FURTHER ORDERED that, if no applications for review are timely filed, this proceeding SHALL BE TERMINATED, and the docket CLOSED.

FEDERAL COMMUNICATIONS COMMISSION

Ira Keltz  
Acting Chief  
Office of Engineering and Technology

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<sup>24</sup> Waver Order at 5; *see also* Continental Request at 9.