

**Robert Bosch LLC**  
**Request for Experimental Special Temporary Authority**  
**ELS File No. 1700-EX-ST-2021**

**SUPPORTING STATEMENT**

Pursuant to Section 5.3 (h) and (j), Section 5.51, and Section 5.61 of the Federal Communications Commission (“FCC”) rules, 47 C.F.R. §§ 5.3 (h) & (j), 5.51, and 5.61 (2021), Robert Bosch LLC (“Bosch”) respectfully requests a limited, 30-day special temporary authority (“STA”) so that it may adjust Part 15 ultra-wideband (“UWB”) devices designed in part to operate on 7.9872 GHz (“Channel 9”). Specifically, Bosch seeks authority to operate mobile devices in connection with the calibration of such devices at an industrial site for a total period of approximately 100 seconds starting on November 8 and ending on December 8, 2021.

The UWB devices to be operated are associated with 200 automotive vehicles that were newly assembled and are located in a large parking yard on the premises of the vehicle manufacturing plant. The devices are used in support of a keyless entry system for the vehicles. Before the vehicles were scheduled to leave the plant, Bosch (as the manufacturer of the UWB devices) discovered that the software it had installed in the devices would result in operation above the limits for which the devices were certified. Bosch proposes to address this issue by installing revised software using an over-the-air update that Bosch employees will supervise.

The operation will be conducted in-situ and will involve “training” the UWB sensors used in the vehicles before the vehicles are sent to dealers. This training is an operation normally conducted within the manufacturing plant when the vehicle is assembled, but in this case will occur on a one-time basis post-assembly. The training will then facilitate an over-the air installation of revised software that adjusts the output power of the device to be consistent with their equipment authorizations (“certification”) issued under Part 15 of the FCC rules.

In support of Bosch’s request, the following is shown:

**1) Company Background:**

Robert Bosch LLC, an international manufacturer of tools, automotive equipment, and industrial and consumer products. Its address and FCC Registration Number (“FRN”) are provided below:

Robert Bosch LLC  
15000 Haggerty Road  
Plymouth, MI 48170

FRN: 0031529902

**2) Need for Experimental Special Temporary Authority:**

As noted above, Bosch seeks a limited, 30-day STA (from November 8 to December 8, 2021) to operate mobile equipment installed on 200 parked vehicles located at an industrial site. For each training attempt, the UWB device will transmit for 102 milliseconds. While the training may be successful on the first attempt, the exercise assumes that as many as 3 attempts may be needed for each vehicle. Thus, the transmission per vehicle is not expected to exceed half a second and the total transmission time for all vehicles is expected not to exceed approximately 100 seconds.

**3) Location of Operational Site:**

Bosch seeks to conduct its operations at a commercial, industrial site comprised of approximately 100 acres located in Detroit, Michigan (Coordinates 42-22-48W; 83-02-16W (NAD83)). The devices to be operated under the requested STA will be limited to a radius of less than 0.5 kilometers from the coordinates specified in its application on FCC Form 442.

**4) Frequencies Desired:**

As noted above, Bosch seeks to operate Part 15 ultra-wideband ("UWB") equipment designed in part to operate on 7.9872 GHz (industry Channel 9) and will operate with a -10dB bandwidth of not more than 600 MHz.

Bosch acknowledges that it must operate on a secondary, non-interference basis and that the selection of different frequencies may be necessary to avoid the potential for interference. Moreover, Bosch will monitor the channel prior to commencing operation and will seek to transmit only when the channel is not in use. If during the operation, Bosch determines that there is a potential to cause interference it will suspend operation to avoid such interference.

**5) Power Levels and Duty Cycle:**

Bosch will operate with the minimum necessary power to conduct its adjustments, but it will not exceed a mean effective radiated power ("ERP") of 100 microwatts as specified in the application on FCC Form 442.

In addition, the adjustments to be conducted under the requested authority will be intermittent. The actual on-the-air time period for the UWB devices will not be continuous, and operations will occur intermittently over a few days during the STA term requested of November 8 through December 8.

**6) Type of Emission, Modulation Technique, and Bandwidth Required:**

Operations will be conducted primarily with the emissions and modulation techniques specified in the application. If other emission modes and modulation techniques are utilized, in no event will the emissions extend beyond the frequency bandwidth or channel requested.

Bosch does not propose to supply station identification as set forth in Section 5.115 of the Commission's Rules, 47 C.F.R. § 5.115 (2021).

**7) Equipment To Be Used:**

Bosch proposes to operate UWB devices under the STA requested in this application in association with not more than three (3) vehicles at any one time containing the mobile devices manufactured by Bosch.

**8) Antenna Information and Compliance with Human Exposure Limits:**

Bosch will comply with all Federal Aviation Administration (“FAA”) and FCC rules and regulations regarding the installation and operation of antennas and their support structures. The antenna to be deployed under the authority requested will not extend more than two meters above ground.

All power levels will comply with the limits set forth in the FCC’s rules, including those relating to human exposure to radiation. In addition, all personnel who will operate the equipment are knowledgeable as to the effects of RF energy and will have the ability to control their exposure.

**9) Restrictions on Operation:**

Bosch understands that other stations may be licensed on the channel it has requested and that, if any interference occurs, it may be required to discontinue its operations immediately. Bosch does not expect such interference to occur, however, as its operations will be conducted only on a limited basis as described above.

Bosch also recognizes that: (a) permission to operate has been granted under experimental authority issued by the Federal Communications Commission, is strictly temporary, and may be cancelled at any time and that (b) operation is subject to the condition that it not cause harmful interference.

**10) Interference Protection/Stop Buzzer Contact Information:**

As noted above, Bosch recognizes that the operation of any equipment under experimental authority must not cause harmful interference to authorized facilities and that this application may need to be coordinated by the FCC with IRAC/NTIA. Should interference occur, Bosch will take immediate steps to resolve the interference, including if necessary, arranging for the immediate discontinuance of operation. Notwithstanding these precautions, Bosch believes that its operation is unlikely to cause interference. It proposes to limit the power and transmitting times of the proposed operations to the minimum necessary to conduct its adjustments, which will be limited to a parking lot for finished vehicles on the property of an automobile assembly plant within a 0.5 km radius of the center coordinates specified in the application.

Bosch also advises the FCC that Joseph Williamson is the technical contact for this request and that he will serve as the “stop buzzer” contact. Mr. Williamson’s telephone number is (734) 979-4725 and his email address is [Joseph.Williamson@us.bosch.com](mailto:Joseph.Williamson@us.bosch.com).

**11) Contact Information:**

Company Contact:

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