



# Vehicular Radar Certification Under Part 95 Subpart M

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# Background

- New rule part (Part 95 Subpart M) created by FCC Report and Order (FCC 17-94), adopted on July 13, 2017.
  - Reallocated 77.5 to 78.0 GHz to Radiolocation Service on a primary allocation basis.
  - Facilitates a globally-harmonized vehicular radar band extending from 76.0-81.0 GHz.
  - Consolidates domestic vehicular radar operations using a licensed-by-rule approach.
  - Provides for interference protection commensurate with a primary service allocation.
  - Allows for limited non-vehicular fixed and mobile radar applications in airport terminal areas
    - Foreign object debris (FOD) detection
    - Aircraft-mounted radars for ground use only
      - wingtip collision avoidance
    - Rotary aircraft included
- KDB Publication 653005 is evolving to provide certification guidance relative to this new rule part.



# What Constitutes a Vehicle?

- Radars certified under Part 95 Subpart M can be installed on:
  - Automobiles and trucks,
  - Railroad train locomotives and cars,
  - Monorails or trams,
  - Construction and farming vehicles,
  - Motorcycles, scooters, and motorbikes,
  - Mobile work platforms (e.g., scissor lifts), and
  - Marine vessels (boats and ships) operating within U.S. territorial waters.
- All installations must comply with grant conditions and relevant technical standards.
- Separate grants unnecessary for use of approved radars on different vehicle types.



# Certification Issues

- Removes references to vehicular radar operations in the 16.2-17.7 GHz band (§15.252) and the 46.7-46.9 GHz band (§15.253).
- Phases out wideband vehicular radar operations in 23.12-29.0 GHz band (§15.252) and ultra-wideband vehicular radar operations in 22-29 GHz (§15.515).
  - Certification applications no longer accepted after September 20th, 2018.
  - Class II permissive changes no longer permitted after January 1, 2022.
  - Manufacture, importation, marketing, sales, and installation will not be permitted after Jan 1, 2022, with the exception of the replacement or repair of malfunctioning equipment that was installed prior to January 1, 2022.



# Certification Issues (continued)

- Does not apply to unlicensed radars operating in the 24.075-24.175 GHz frequency bands under §15.245 and/or §15.249.
  - Vehicular radar applications under these rule parts can continue unabated.
- Vehicular radars previously certified for operation in 76-77 GHz band segment under §15.253 need not be recertified under Part 95 M; however operation will now be on a licensed-by-rule basis and any permissive changes must be made under the Part 95 M requirements.



# Technical Requirements

- Radar equipment intended for operation shall be certified in accordance with Part 95 Subpart M and Part 2 Subpart J.
  - New Equipment Class: Vehicle Radar Devices (VRD)
- Radiated power limits specified in §95.3367
  - Maximum (RMS average) EIRP shall not exceed 50 dBm.
  - Maximum peak EIRP spectral density shall not exceed 55 dBm when measured with a peak power detector using a 1 MHz RBW.
- Unwanted emissions limits specified in §95.3379
- An effort to develop specific compliance measurement guidance in collaboration with C63 is being initiated.
  - Relevant technical comments received in response to the draft publication of KDB 653005 will be considered.
- Existing guidance in C63.10 can be utilized in the interim.
- Specific compliance measurement questions should be referred to us by means of the KDB inquiry system.