

the Board under paragraph (b) of this section.

Dated: November 15, 1999.

Thomasenia P. Duncan,

General Counsel.

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FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 2 and 90

[ET Docket No. 98-95, FCC 99-305]

Dedicated Short Range Communications of Intelligent Transportation Services

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This document allocates 75 megahertz of spectrum at 5.850-5.925 GHz to the mobile service for use by Dedicated Short Range Communications ("DSRC") systems operating in the Intelligent Transportation System ("ITS") radio service. ITS services are expected to improve traveler safety, decrease traffic congestion, facilitate the reduction of air pollution, and help to conserve vital fossil fuels. DSRC systems are being designed that require a short range wireless link to transfer information between vehicles and roadside systems. We are also adopting basic technical rules establishing power limits, and unwanted emission limits for DSRC operations. These decisions will further the goals of the United States ("U.S.") Congress and the Department of Transportation ("DOT") to improve the efficiency of the Nation's transportation infrastructure and will facilitate the growth and development of the ITS industry.

EFFECTIVE DATE: December 27, 1999.

FOR FURTHER INFORMATION CONTACT: Tom Derenge, Office of Engineering and Technology, (202) 418-2451.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's *Report and Order*, ET Docket 98-95, FCC 99-305, adopted October 21, 1999, and released October 22, 1999. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Reference Information Center, Room Cy-A257, 445 12th Street, S.W., Washington, D.C., and is available on the FCC's Internet site at www.fcc.gov/Bureaus/Engineering-Technology/Orders/1999/. This document may also be purchased from the Commission's

duplication contractor, International Transcription Service, (202) 857-3800, 1231 20th Street, N.W. Washington, D.C. 20036.

Summary of the Report and Order

1. By this action, the Commission allocates 75 megahertz spectrum at 5.850-5.925 GHz to the mobile service for use by Dedicated Short Range Communications ("DSRC") systems operating in the Intelligent Transportation System ("ITS") radio service. ITS services are expected to improve traveler safety, decrease traffic congestion, facilitate the reduction of air pollution, and help to conserve vital fossil fuels. DSRC systems are being designed that require a short range wireless link to transfer information between vehicles and roadside systems. We are also adopting basic technical rules establishing power limits and unwanted emission limits for DSRC operations. The R&O defers consideration of licensing and service rules and spectrum channelization plans to a later proceeding because standards addressing such matters are still under development by the Department of Transportation. Once such standards are developed, the Commission could take whatever action is necessary to implement the standards related to DSRC use. The decisions made here will further the goals of the U.S. Congress and the DOT to improve the efficiency of the Nation's transportation infrastructure and will facilitate the growth and development of the ITS industry.

2. On June 11, 1998, the Commission released the *Notice of Proposed Rule Making* ("NPRM") in ET Docket No. 98-95, 63 FR 35558, June 30, 1998, which proposed to allocate the 5.85-5.925 GHz band on a primary basis to the mobile service for use by DSRC-based ITS operations. ITS applications rely upon the integration of advanced communications systems and highway infrastructure systems. Communications are an essential component of the backbone of all ITS applications, which rely on the swift and accurate flow of information. While many ITS communications requirements are being met within the framework of existing telecommunications systems, the NPRM stated that there is a need for spectrum for reliable short-range wireless communications links between vehicles traveling at highway speeds and roadside systems, i.e., DSRC. Accordingly, the Commission proposed an allocation of 75 megahertz of spectrum near 5.9 GHz for DSRC operations and requested comment on various related matters.

3. On June 9, 1998, the President signed the *Transportation Equity Act for the 21st Century*. Section 5206(f) of this Act states that "[t]he Federal Communications Commission shall consider, in consultation with the Secretary of Transportation, spectrum needs for the operation of intelligent transportation systems, including spectrum for the dedicated short-range vehicle-to-wayside wireless standard. Not later than January 1, 2000, the Federal Communications Commission shall have completed a rule making considering the allocation of spectrum for intelligent transportation systems."

4. The R&O recognizes the substantial efforts by both Government and non-Government entities to develop, in response to Congress' transportation legislation, a National ITS Plan and Architecture addressing ways of using communications technologies to increase the efficiency of the nation's transportation infrastructure. While some parties argue that other spectrum may be more appropriate for DSRC operations, the Commission found that the 5.85-5.925 GHz band can accommodate a wide variety of reliable DSRC applications without significantly hindering other users of this spectrum.

Spectrum Allocation

5. Domestically, the entire 5.850-5.925 GHz band is currently allocated on a co-primary basis for the Government's Radiolocation Service (i.e., for use by high-powered military radar systems) and for non-Government Fixed Satellite Service ("FSS") uplink operations. Industrial, Scientific and Medical ("ISM") devices and unlicensed part 15 devices are also permitted to operate in the 5.850-5.875 GHz segment. Finally, the Amateur radio service has a secondary domestic allocation in the entire band.

6. The R&O concludes that the 5.9 GHz range is appropriate for DSRC applications due to its potential compatibility with European and Asian DSRC developments, the availability of radio technology, signal propagation characteristics, and the available spectral capacity in this spectrum range. After carefully reviewing the record, we conclude that an allocation of spectrum in the 5.9 GHz region is the best available choice for DSRC applications. The record also demonstrates that the propagation characteristics of this region of the spectrum are well suited to the short range communications of up to a mile that will typify DSRC operations. The ITS community has done research showing that the 5.85-5.925 GHz frequency band provides adequate range for DSRC

communications and reasonable frequency reuse distances.

7. First, we note that DSRC applications are a key element in meeting the nation's transportation needs into the next century and in improving the safety of our nation's highways. The record submitted for DSRC deployment in the U.S. indicates a need for up to 32 different DSRC transactions, many of which will require two-way capabilities, wideband channels, and the need for multiple channels in a single location. We also note that not all channels will be available for DSRC deployment in all areas due to incumbent radar, ISM and FSS operations. Therefore, we find that 75 megahertz of DSRC spectrum within the United States is warranted due to the scope of the National ITS Architecture, the incumbent operations in this band in the U.S. and consideration DSRC developments domestically and internationally.

8. The R&O also addresses, ITS compatibility issues with Canada and Mexico and concludes that our allocation is sufficient to promise interoperability with Canadian ITS developments. While discussions with Mexico are on-going, the Commission does not anticipate spectrum sharing problems with operations in Mexico. As service rules are developed and operations in these bands are more clearly defined, the need to develop coordination requirements in border areas will be considered. Nevertheless, the R&O encourages any entities addressing standards for ITS operations in the 5.9 GHz range to plan DSRC applications with the least potential for interference with Canadian operations for the 5.875–5.883 GHz and 5.908–5.925 GHz bands.

9. The R&O concludes that the 5.85–5.925 GHz band is appropriate for DSRC-based ITS applications due to the variety of operations to be accommodated, the propagation characteristics of the band, the significant efforts of the Federal and state governments paired with industry to research ITS use in this band, and ITS developments internationally. Accordingly, the R&O allocates the 5.850–5.925 GHz band on a primary basis to the mobile service for use by DSRC-based ITS operations. In order to insure that mobile operations in this range are ITS related, the item adopts footnote NG160 to the Table of Frequency Allocations to read as follows:

NG160: In the 5850–5925 MHz band, the use of the non-Federal government mobile service is limited to Dedicated Short Range

Communications operating in the Intelligent Transportation System radio service.

Spectrum Sharing

10. *Government Radar Operations.* The National Telecommunications and Information Administration ("NTIA") urges the Commission to require DSRC operations within 75 kilometers of 65 possible radar locations to coordinate their operations through the Frequency Assignment Subcommittee of the Interdepartment Radio Advisory Committee ("IRAC"). DOT provides a study that indicates that DSRC operations could operate in close proximity to most high powered Government radar operations. The R&O concludes that sharing between DSRC and Government operations is possible if proper coordination is performed, and thus adopts the NTIA recommendation. Further, DSRC applications within these coordination areas cannot claim protection from existing radar operations, but new radar installations that may be deployed subsequent to DSRC implementation would have to coordinate with incumbent DSRC operations.

11. *FSS Operations.* The R&O finds that DSRC applications would be compatible with FSS uplinks because FSS earth stations typically use highly directional antennas pointed towards the geostationary orbital arc, and DSRC applications would typically be pointed towards a highway and operate at relatively low power. It may be necessary in some cases for DSRC systems to avoid an area near an incumbent FSS earth station in order to avoid the high powered earth station transmission. Nonetheless, because of the limited number of FSS earth stations and their use of highly directional antennas, the R&O finds that spectrum sharing is feasible. At this time, the Commission does not anticipate that prior coordination is necessary between DSRC and FSS operations.

12. *Amateur Service Operations.* The R&O concludes that DSRC operations in the 5.85–5.925 GHz band are unlikely to receive significant interference from or cause interference to amateur operations. Further, the R&O notes that amateur operations are secondary in this spectrum range. The R&O does not anticipate that a formal coordination procedure will be necessary because amateur operations are not extensively deployed, and due to the availability of interference remedies if they occur. The R&O encourage any ITS entities wishing to use the 5.85–5.925 GHz band to informally notify the ARRL or the local amateur service community of its intended operation.

13. *Unlicensed Hearing Assistance Devices.* Resound filed comments stating that it is contemplating development of unlicensed low power hearing assistance devices in the 5.85–5.875 GHz band under the FCC's Part 15 rules. Even if the Commission were to preclude DSRC operations in the 5.85–5.875 GHz segment, the incumbent operations in this band already pose a significant interference environment for hearing assistance devices. The R&O recognizes that Resound's hearing assistance devices could be beneficial and encourage them to identify other spectrum that may be more appropriate for these devices.

Technical Requirements

14. The Secretary of Transportation submitted, in satisfaction of the June 1, 1999 statutory requirement, a report to Congress identifying which standards are critical to national interoperability or standards development and specifying the status of the development of each standard identified. The R&O concludes that it would be beneficial at this time to adopt basic technical requirements to promote spectrum sharing and create a basic framework for the development of DSRC operational standards by industry. The Commission recognizes that the rules it adopts here may need to be reviewed at a later time as it develops licensing and service rules for DSRC systems.

Spectrum Channelization

15. The R&O finds that a spectrum channelization plan would facilitate the efficient use of this spectrum and interoperability among various DSRC services. However, the record here is insufficient to devise a specific channel plan that would adequately address the spectrum requirements, both narrowband and broadband, of the various potential DSRC applications. This action invites the ITS industry and the DOT to consider the spectrum requirements of various DSRC applications and recommend a spectrum channel plan. The Commission will address this matter further in a future proceeding proposing licensing and service rules.

Power

16. The Commission finds that it is important to establish some power limits for DSRC operations so that they can achieve widespread deployment, and typically power requirements need to be flexible enough to allow various DSRC applications to be developed. Most DSRC operations will use highly directional antennas to focus communications in an intended

direction (e.g., along the lane of a highway) and to promote frequency reuse. Therefore, the Commission has adopted the following power requirements for DSRC operations in the 5.85–5.925 GHz band:

The peak transmit output power over the frequency band of operations shall not exceed 750 mW or 28.8 dBm with up to 16 dBi in antenna gain. If transmitting antennas of directional gain greater than 16 dBi are used, the peak transmit output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 16 dBi, i.e., the device's maximum EIRP shall not exceed 30 W EIRP. However, the peak transmitter output power may be increased to account for any line losses due to long transmission cables between the transmitter and the DSRC device's antenna, provided the EIRP does not exceed 30 W.

The Commission finds that this power limit is sufficient to satisfy many DSRC applications, compensate for transmission line losses, promote the deployment of various types of applications, and provide a high degree of frequency reuse. Nonetheless, the rules will require ITS licensees to use the minimal power necessary to achieve reliable communications in order to promote frequency reuse.

Unwanted Emission Limits

17. The R&O states that it is necessary to limit the amount of unwanted emissions, both those occurring outside of the DSRC spectrum band and those emanating from one channel to the next within the DSRC band. The unwanted emission limits proposed are appropriate and necessary to promote spectrum sharing between DSRC applications in the 5.85–5.925 GHz band. Accordingly, the Commission adopts the emission mask requirements of § 90.210(k) for DSRC operations in the 5.9 GHz band. The R&O recognizes that depending on the developing DSRC applications, the licensing scheme adopted and the corresponding spectrum channelization plan, the Commission may need to revisit the emission limits between specific channels or applications, e.g., more sensitive applications on specific channels may require additional protection or a licensee with access to multiple consecutive channels in a geographic area could benefit from additional flexibility regarding unwanted emissions without affecting other operations.

Frequency Stability

18. The Commission proposed to apply to DSRC operations in the 5.9 GHz band the frequency stability requirement specified in § 2.995 (§ 2.1055) of our rules in order to

prevent DSRC operations from causing interference to DSRC operations on other channels or to other services in nearby spectrum. However, part 90 has more specific frequency stability requirements in § 90.213 which vary according to the channel bandwidth of the operation. Since the R&O is not yet able to establish a channelization plan for DSRC operations, the Commission defers any decision on frequency stability requirements to a future proceeding.

RF Guidelines

19. The Commission requires compliance with RF safety guidelines for all applications to ensure the public's safety. Therefore, DSRC operations must comply with the RF safety guidelines contained in the *Second Memorandum Opinion and Order* ("Second MO&O") in ET Docket No. 93–62, 62 FR 47960, September 12, 1997. The R&O finds that this level of protection is appropriate and will not result in exposure to the public of unsafe levels of RF energy.

Unlicensed DSRC Operations

20. Section 15.245 of the Commission's rules permits unlicensed field disturbance sensors to operate in the 5.785–5.815 GHz band. While these field disturbance sensors are not available for two-way information communications, the rules would permit backscatter type toll-tag operations in this band with a permitted average field strength of 500 millivolts/meter at a distance of 3 meters (75 mW EIRP). Additionally, § 15.247 of the rules permits unlicensed spread spectrum communications devices to operate in the 5.725–5.850 GHz band with a maximum peak transmitter output power of 1 watt with antenna gain of up to 6 dBi. Finally, § 15.249 permits unlicensed communications devices to operate in the 5.725–5.875 GHz band with a maximum average field strength of 50 millivolts/meter at a distance of 3 meters (0.8 mW EIRP).

21. The R&O finds that a backscatter system that transmits an unmodulated carrier signal to a mobile transponder which, in turn, reflects a modulated signal, does not qualify as a conventional spread spectrum system under the part 15 rules. Part 15 defines a spread spectrum system as a system that conveys information by modulation of a carrier by some conventional means and then deliberately widens the bandwidth by means of a spreading function over that which would be needed to transmit the information alone. Because backscatter beacon stations do not modulate their carriers,

they do not qualify as spread spectrum devices. The R&O declines to modify the rules to allow backscatter systems to qualify for use as spread spectrum systems under § 15.247. Nevertheless, the spread spectrum requirements of § 15.247 can likely accommodate a wide range of alternative unlicensed DSRC communication systems.

Other Issues

22. The Commission adopts the following definition of DSRC services for this mobile allocation in the 5.9 GHz range:

The use of non-voice radio techniques to transfer data over short distances between roadside and mobile radio units, between mobile units, and between portable and mobile units to perform operations related to the improvement of traffic flow, traffic safety and other intelligent transportation service applications in a variety of public and commercial environments. DSRC systems may also transmit status and instructional messages related to the units involved.

Final Regulatory Flexibility Analysis

23. As required by the Regulatory Flexibility Act ("RFA"),¹ an Initial Regulatory Flexibility Analysis ("IRFA") was incorporated into the *Notice of Proposed Rule Making* ("NPRM") in ET Docket No. 98–95, 63 FR 35558, June 30, 1998. The Commission sought written comment on the proposals in the NPRM, including the IRFA. The Final Regulatory Flexibility Analysis ("FRFA") in this Report and Order conforms to the RFA.²

A. Need for and Objective of This Report and Order (R&O).

This R&O allocates the 5.850–5.925 GHz band to the Private Land Mobile Service ("PLMS") for use by Dedicated Short Range Communications Services ("DSRCS") in the provision of Intelligent Transportation Services ("ITS"). DSRCS communications are used for non-voice wireless transfer of data over short distances between roadside and mobile radio units, between mobile units, and between portable and mobile units to perform operations related to the improvement of traffic flow, traffic safety and other intelligent transportation service applications in a variety of public and commercial environments. The objective of this action is to provide sufficient spectrum to permit the development of DSRCS technologies to

¹ See 5 U.S.C. 603. The RFA, see 5 U.S.C. 601 *et seq.*, has been amended by the Contract With America Advancement Act of 1996, Public Law 104–121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

² See 5 U.S.C. 604.

improve the Nation's transportation infrastructure and bolster the involvement of United States companies in this emerging industry. While this R&O does adopt an allocation and some basic technical parameters, the issues of licensing, channelization, and other complex technical matters are being deferred to a later proceeding. Therefore, because this present action will not result in the provision of these operations, the IRFA certified that the NPRM would not have a significant economic impact on a substantial number of small entities. Nevertheless, a full voluntary IRFA was performed. No comments directly addressed the IRFA.

B. Summary of Significant Issues Raised by the Comments in Response to the IRFA

No comments were filed in response to the IRFA.

C. Description and Estimate of the Number of Small Entities to Which the Rules Will Apply

Under the RFA, small entities may include small organizations, small businesses, and small governmental jurisdictions.³ The RFA, 5 U.S.C. 601(3), generally defines the term "small business" as having the same meaning as the term "small business concern" under the Small Business Act, 15 U.S.C. 632. A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration ("SBA"). This standard also applies in determining whether an entity is a small business for purposes of the RFA. The 5.85–5.925 GHz band is currently available to the U.S. Federal Government for Radiolocation purposes, Fixed Satellite Service licensees for international intercontinental links, amateur radio operators and by various entities using part 18 Industrial, Scientific and Medical ("ISM") equipment and part 15 unlicensed device equipment. We note that there are only 45 Fixed Satellite Service ("FSS") licenses issued for operation in 5.85–5.925 GHz band and most if not all are held by large corporations. Further, amateur radio operators and the Federal Government do not qualify as small entities. We also note that part 18 ISM devices are protected in this band, which only generate electromagnetic energy, are not used for communication purposes and therefore cannot receive interference or be impacted by this

action. Finally, while part 15 unlicensed devices are permitted to operate in the 5.85–5.875 GHz portion, they do so on an unlicensed, unprotected basis. Further, the Commission has no means to determine the number of small entities that might use unlicensed part 15 equipment that operates in the band at issue. SBA guidelines to the Small Business Regulatory Enforcement Fairness Act ("SBREFA") state that about 99.7% of all firms are small and have fewer than 500 employees and less than \$25 million in sales and assets.⁴ There are approximately 6.3 million establishments in the SBA database.⁵ The R&O discusses means by which the potential DSRCS would be able to share the spectrum with incumbent operations and concludes that harmful interference can be avoided through coordination. Accordingly, we do not believe this action would have a negative impact on small entities that operate in the 5.85–5.925 GHz band.

Regarding the Fixed Satellite Service licensees for international intercontinental links, the Commission has not developed a definition of small entities applicable to licensees in the international services. Therefore, the applicable definition of small entity is generally the definition under the SBA rules applicable to Communications Services, Not Elsewhere Classified (NEC).⁶ This definition provides that a small entity is expressed as one with \$11.0 million or less in annual receipts.⁷ According to the Census Bureau, there were a total of 848 communications services providers, NEC, in operation in 1992, and a total of 775 had annual receipts of less than \$9,999 million.⁸ The Census report does not provide more precise data. Regarding the future use of the 5.85–5.925 GHz band by DSRCS equipment, we believe it is too early to make a determination on such operations. A future rule making proceeding will propose further technical standards, licensing and service rules and a separate regulatory flexibility analysis will address all issues relevant to that proceeding.

⁴ See *A Guide to the Regulatory Flexibility Act*, U.S. Small Business Administration, Washington, DC, May 1996, at page 14.

⁵ *Id.* at 15.

⁶ An exception is the Direct Broadcast Satellite (DBS) Service, *infra*.

⁷ 13 CFR 120.121, SIC code 4899.

⁸ 1992 *Economic Census Industry and Enterprise Receipts Size Report*, Table 2D, SIC code 4899 (U.S. Bureau of the Census data under contract to the Office of Advocacy of the U.S. Small Business Administration).

D. Description of Projected Reporting, Record Keeping and Other Compliance Requirements

In this proceeding, we are allocating this spectrum for a new service. The licensing and technical regulations governing these operations will be addressed in a separate proceeding. Therefore, this action does not create any reporting or compliance requirements.

E. Steps Taken To Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

The IRFA in this proceeding requested comment on ways to minimize economic impact on small entities, but no comments were filed. Nevertheless, the attached R&O discusses whether operational standards should be adopted to facilitate nationwide interoperability of DSRCS, but deferred this issue to a later proceeding that will develop service rules for these operations. The development of DSRCS operational standards could delay the initial deployment of such equipment, but could ultimately result in equal footing for all manufacturers, including small entities, in producing equipment that meets uniform standards.

F. Report to Congress

This Commission will send a copy of the R&O, including this FRFA, in a report to be sent to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996, see U.S.C. 801(a)(1)(A). In addition, the Commission will send a copy of the R&O, including FRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects in 47 CFR Parts 2 and 90

Communications equipment, Radio.
Federal Communications Commission.
Magalie Roman Salas,
Secretary.

Rules Changes

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR parts 2 and 90 as follows:

PART 2—FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

1. The authority citation for part 2 continues to read as follows:

Authority: 47 U.S.C. 154, 302, 303, 307, 336 and 337, unless otherwise noted.

³ See 5 U.S.C. 601(6).

2. Section 2.106, the Table of Frequency Allocations, is amended as follows:

a. Revise the entry for the 5850–5925 MHz band to read as follows.
b. Add footnote NG160.

§ 2.106 Table of Frequency Allocations

* * * * *

International table			United States table		FCC use designators	
Region 1—allocation MHz	Region 2—allocation MHz	Region 3—allocation MHz	Government Allocation MHz	Non-Government Allocation MHz	Rule part(s)	Special-use frequencies
(1)	(2)	(3)	(4)	(5)		
*	*	*	*	*	*	*
5850–5925 FIXED	5850–5925 FIXED	5850–5925 FIXED	5850–5925 RADIOLOCATION G2	5850–5925 FIXED-SAT- ELLITE (Earth- to-space) US245	ISM Equipment (18) Private Land Mo- bile (90) Amateur (97)	
FIXED-SATELLITE (Earth-to-space)	FIXED-SAT- ELLITE (Earth- to-space)	FIXED-SAT- ELLITE (Earth- to-space)		MOBILE NG160 Amateur		
MOBILE	MOBILE Amateur Radiolocation	MOBILE Radiolocation				
S5.150	S5.150	S5.150	S5.150 US245	S5.150		
*	*	*	*	*	*	*

Non-Government (NG) Footnotes

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NG160: In the 5850–5925 MHz band, the use of the non-Federal government mobile service is limited to Dedicated Short Range Communications operating in the Intelligent Transportation System radio service.

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PART 90—PRIVATE LAND MOBILE RADIO SERVICES

3. The authority citation for part 90 continues to read as follows:

Authority: Sections 4, 251–2, 303, 309, 332, and 337, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 251–2, 303, 309, and 332, unless otherwise noted.

4. Section 90.7 is amended by adding a new definition for Dedicated Short Range Communications Service to read as follows:

§ 90.7 Definitions.

* * * * *

Dedicated Short Range Communications Services (DSRCS) The use of non-voice radio techniques to transfer data over short distances between roadside and mobile radio units, between mobile units, and between portable and mobile units to perform operations related to the improvement of traffic flow, traffic safety and other intelligent transportation service applications in a variety of public and commercial environments. DSRC systems may also

transmit status and instructional messages related to the units involved.

* * * * *

5. Section 90.205 is amended by redesignating paragraphs (m) and (n) as paragraphs (n) and (o), respectively; and by adding a new paragraph (m) to read as follows:

§ 90.205 Power and antenna height limits.

* * * * *

(m) *5850–5925 MHz.* The peak transmit output power over the frequency band of operations shall not exceed 750 mW or 28.8 dBm with up to 16 dBi in antenna gain. If transmitting antennas of directional gain greater than 16 dBi are used, the peak transmit output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 16 dBi, *i.e.*, the device's maximum EIRP shall not exceed 30 W EIRP. However, the peak transmitter output power may be increased to account for any line losses due to long transmission cables between the transmitter and the DSRCS device's antenna, provided the EIRP does not exceed 30 W.

* * * * *

6. Section 90.210 is amended by revising the "APPLICABLE EMISSION MASKS" Table and by revising paragraphs (k)(3), (k)(3)(i), and (k)(3)(ii) to read as follows:

§ 90.210 Emission masks.

* * * * *

APPLICABLE EMISSION MASKS

Frequency band (MHz)	Mask for equipment with Audio low pass filter	Mask for equipment without audio low pass filter
Below 25 ¹	A or B	A or C
25–50	B	C
72–76	B	C
150–174 ²	B, D, or E	C, D, or E
150 Paging-only	B	C
220–222	F	F
421–512 ²	B, D, or E	C, D, or E
450 Paging-only	B	G
806–821/851–866 ³ .	B	G
821–824/866–869.	B	H
896–901/935–940.	I	J
902–928	K	K
929–930	B	G
5850–5925	K	K
All other bands ..	B	C

¹ Equipment using single sideband J3E emission must the requirements of Emission Mask A. Equipment using other emissions must meet the requirements of Emission Mask B or C, as applicable.

² Equipment designed to operate with a 25 kHz channel bandwidth must meet the requirements of Emission Mask B or C, as applicable. Equipment designed to operate with a 12.5 kHz channel bandwidth must meet the requirements of Emission Mask D, and equipment designed to operate with a 6.25 kHz channel bandwidth must meet the requirements of Emission Mask E.

³ Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of § 90.691.

* * * * *

(k) * * *

(3) *Other transmitters.* For all other transmitters authorized under subpart M that operate in the 902–928 MHz band and for Dedicated Short Range Communication Services in the 5.850–5.925 GHz band, the peak power of any emission shall be attenuated below the power of the highest emission contained within the licensee’s sub-band in accordance with the following schedule:

(i) On any frequency within the authorized bandwidth: Zero dB.

(ii) On any frequency outside the licensee’s sub-band edges: $55 + 10 \log(P)$ dB, where (P) is the highest emission (watts) of the transmitter inside the licensee’s sub-band.

* * * * *

7. Section 90.350 is revised to read as follows:

§ 90.350 Scope.

The Intelligent Transportation Systems radio service is for the purpose of integrating radio-based technologies into the nation’s transportation infrastructure and to develop and implement the nation’s intelligent transportation systems. It includes the Location and Monitoring Service (LMS) and Dedicated Short Range Communications Service (DSRCS). Rules as to eligibility for licensing, frequencies available, and any special requirements for services in the Intelligent Transportation Systems radio service are set forth in this subpart.

8. A new § 90.371 is added to subpart M to read as follows:

§ 90.371 Dedicated short range communications service.

(a) These provisions pertain to systems in the dedicated short range communications services (DSRCS). DSRCS systems utilize non-voice radio techniques to transfer data over short distances between roadside and mobile radio units, between mobile units, and between portable and mobile units to perform operations related to the improvement of traffic flow, traffic safety and other intelligent transportation service applications in a

variety of public and commercial environments. When authorized, DSRCS licensees operating systems in the 5850–5925 MHz band may serve individuals, federal government agencies and entities eligible for licensing in this Part, and must comply with the following requirements.

(b) DSRCS stations operating in the band 5850–5925 MHz shall not receive protection from Government Radiolocation services in operation prior to the establishment of the DSRCS station. Operation of DSRCS stations within 75 kilometers of the locations listed in the table below must be coordinated through the National Telecommunications and Information Administration.

Location	Latitude	Longitude
Ft. Lewis, WA	470525N	1223510W
Yakima Firing Center, WA.	464018N	1202135W
Ft. Carson, CO	383810N	1044750W
Ft. Riley, KS	385813N	0965139W
Ft. Shafter, HI	211800N	1574900W
Hunter Army Airfield, GA.	320100N	0810800W
Ft. Gillem, GA	333600N	0841900W
Ft. Benning, GA	322130N	0845815W
Ft. Stewart, GA	315145N	0813655W
Ft. Rucker, AL	311947N	0854255W
Yuma Proving Grounds, AZ.	330114N	1141855W
Ft. Hood, TX	310830N	0974550W
Ft. Knox, KY	375350N	0855655W
Ft. Bragg, NC	350805N	0790035W
Ft. Campbell, KY	363950N	0872820W
Ft. Polk, LA	310343N	0931226W
Ft. Leonard Wood, MO.	374430N	0920737W
Ft. Irwin, CA	351536N	1164102W
Ft. Sill, OK	344024N	0982352W
Ft. Bliss, TX	314850N	1062533W
Ft. Leavenworth, KS	392115N	0945500W
Ft. Drum, NY	440115N	0754844W
Ft. Gordon, GA	332510N	0820910W
Ft. McCoy, WI	440636N	0904127W
Ft. Dix, NJ	400025N	0743713W
Parks Reserve Forces Training Area, CA.	374254N	1214218W
Ft. Hunter Liggett, CA	355756N	1211404W
Pacific Missile Test Center, CA.	340914N	1190524W

Location	Latitude	Longitude
Naval Air Development Center, PA.	401200N	0750500W
Mid-Atlantic Area Frequency Coordinator, MD.	381710N	0762500W
Naval Research Laboratory, MD.	383927N	0763143W
Naval Ocean Systems Center, CA.	324500N	1171000W
Naval Research Laboratory, DC.	385500N	0770000W
Naval Surface Weapons Center, MD.	390205N	0765900W
Naval Electronic Systems Engineering Activity, MD.	381000N	0762300W
Midway Research Center, VA.	382640N	0772650W
Aberdeen Proving Ground, MD.	392825N	0760655W
Ft. Huachuca, AZ	313500N	1102000W
Ft. Monmouth, NJ	401900N	0740215W
Picatinny Arsenal, NJ	405600N	0743400W
Redstone Arsenal, AL.	343630N	0863610W
White Sands Missile Range, NM.	322246N	1062813W
Army Research Laboratory, MD.	390000N	0765800W
Space and Missile Systems Center, CA.	335500N	1182200W
Edwards AFB, CA	345400N	1175200W
Patrick AFB, FL	281331N	0803607W
Eglin AFB, FL	302900N	0863200W
Holloman AFB, NM ..	322510N	1060601W
Kirtland AFB, NM	350230N	1063624W
Griffiss AFB, NY	431315N	0752431W
Wright-Patterson AFB, OH.	394656N	0840539W
Hanscom AFB, MA ..	422816N	0711725W
Nellis AFB, NV	361410N	1150245W
Vandenberg AFB, CA	344348N	1203436W
U.S. Air Force Academy, CO.	385800N	1044900W
Brooks AFB, TX	292000N	0982600W
Arnold AFB, TN	352250N	0860202W
Tyndall AFB, FL	300412N	0853436W
Charles E. Kelly Support Facility—Oakdale, PA.	402357N	0800925W