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Summary of the Second Report and Order and Memorandum Opinion and Order

1. In this Second Report and Order and Memorandum Opinion and Order, the Commission is updating certain regulations for unlicensed radio frequency devices contained in parts 2, 15 and 18 of our rules. Specifically, the Commission is: (1) Changing certain emission levels in the restricted bands above 38.6 GHz; (2) eliminating the prohibition on data transmissions and making other changes to rules governing part 15 remote control devices; (3) modifying the rules for radio frequency identification systems to allow for improved operation; (4) simplifying the labeling requirement for manufacturer self-authorized equipment; and (5) making other changes to update and correct our rules. Because of certain decisions in this Second Report and Order, the Commission is granting a petition for reconsideration filed by the Information Technology Industry Council (ITI) in ET Docket No. 95-19 to the extent indicated herein and granting a petition for declaratory ruling filed by M/A-COM Private Radio Systems, Inc. to the extent indicated herein.

2. In recent years, there has been a significant increase in the proliferation of unlicensed radio frequency devices that are regulated under part 15 of our rules (part 15 devices). Such devices are increasingly relied upon for many everyday functions in consumers' lives. Examples of common part 15 devices include cordless phones, computers, baby monitors, and garage door openers. The range of applications and technologies for these types of devices continues to evolve at a rapid pace. For example, digital processing speeds of personal computers are above 2400 MHz as compared to only 25 MHz about 10 years ago. Cordless telephones now operate at higher frequencies, with digital modulation techniques providing users with improved performance and additional service features. In addition, technological innovations are now being employed to develop new part 15 equipment and systems for business and professional applications, e.g. high speed, high capacity wireless local area networks (LANs). The part 15 rules have been highly successful in permitting the development of new types of unlicensed devices while protecting authorized users of the radio spectrum from harmful interference. Many millions of

part 15 devices operate at the current limits without any significant interference problems.

3. On October 15, 2001, the Commission adopted a *Notice of Proposed Rule Making and Order* (NPRM), 66 FR 59209, that proposed a number of changes to part 15 and other parts of the rules. These proposals were based on recommendations contained within the *Biennial Regulatory Review 2000 Updated Staff Report*, two petitions for rule making concerning radio frequency identification systems, and other staff recommendations. We received 153 comments and 58 reply comments in response to the NPRM. On July 12, 2002, the Commission adopted a *First Report and Order*, 67 FR 48989, in this proceeding that required radar detectors to comply with the part 15 emission limits for unintentional radiators with regard to emissions in the 11.7-12.2 GHz band to protect very small aperture satellite terminals (VSATs) from interference. This Second Report and Order and Memorandum Opinion and Order addresses many of the issues raised in the NPRM that were not addressed in the *First Report and Order*. We plan to address the issues of radio frequency identification systems in the 425-435 MHz band and further changes to the emission limits in the restricted band above 38.6 GHz other than those discussed herein at a later date.

Restricted Frequency Bands Above 38.6 GHz

4. Specific frequency bands are designated as restricted bands in part 15 to protect certain sensitive radio services from interference, such as those that protect safety-of-life or those that use very low received levels, such as satellite downlinks or radio astronomy. Only spurious emissions are permitted in restricted bands, and such emissions must comply with the limits in § 15.209. The entire frequency range above 38.6 GHz is a restricted band, although there is an exception that permits transmitters to operate in the 46.7-46.9 GHz, 76-77 GHz and 57-64 GHz bands. At the time this frequency range above 38.6 GHz was designated as a restricted band, there was no requirement in our rules to make measurements above 40 GHz because of limitations in measurement technology. Designating the entire frequency range above 38.6 GHz as restricted, rather than restricting designated segments, was simply a matter of administrative convenience and had no impact on manufacturers because measurements were not required at those frequencies. However, due to advancements in measurement

technology, the Commission now requires measurements above 40 GHz for some devices, so these devices must now comply with the restricted band limits.

5. In the NPRM, the Commission sought comment on the need for changes to the restricted bands above 38.6 GHz and the potential benefits to manufacturers of such changes. This Commission stated its belief that it is not necessary to restrict the entire band above 38.6 GHz because only certain portions of the band contain sensitive radio services that require this protection, such as those that protect safety-of-life or those that use very low received levels, such as satellite downlinks or radio astronomy. The Commission also stated in the NPRM that restricting the entire band above 38.6 GHz makes compliance more difficult to achieve for certain devices because they must comply with tighter harmonic limits than would otherwise apply if the band were not restricted. For example, the limit on harmonic emissions from a transmitter operating in the 24.0-24.25 GHz band under § 15.249 of the rules is 2500 µV/m at 3 meters. However, because the harmonics from a device operating in this band fall in the designated restricted band above 38.6 GHz, they must actually comply with a tighter limit of 500 µV/m at 3 meters. This conflict arose as a result of a 1995 rule change that required spurious emissions from transmitters operating above 10 GHz to be measured at frequencies above 40 GHz. Prior to that date, measurements were not required above 40 GHz for such transmitters, so there was effectively no limit on radiated emissions above 40 GHz.

6. Safety Warning System, L.C. (SWS), the Short Range Automotive Radar Frequency Allocation Group (SARA) and Cisco Systems, Inc. (Cisco) support modifying the restricted band above 38.6 GHz. SWS states that there is no need for a restricted band at the second and third harmonics of the 24 GHz band, and that the current restricted band bars socially valuable products at a reasonable price from the market. SARA states that the Commission should lift the blanket restricted status of frequencies above 38.6 GHz and maintain protection only for bands with sensitive services. It states that at a minimum, the Commission should lift the restriction at the third harmonic of 24 GHz, i.e. 72 GHz, because that is the most difficult harmonic to suppress and that lifting that restriction would not adversely affect any passive services. SARA claims that complying with the restricted band harmonic limits can