

operate at 300 MHz. It also notes that the proposed elimination of the prohibition on radio control toys would allow for increased bandwidth and multiple receivers needed to permit racing of several remote control cars. Mattel believes that harmful interference is unlikely from such applications because the devices would be battery operated with low radiated radio frequency power. Ademco does not believe that the Commission should remove the restriction on radio control toys because predicted intensive and repeated use of radio control toys could interrupt security, safety and other vital applications of remote control devices. Cisco and ITI state that permitting a limited data stream for remote control devices would not lead to an increase in interference. Cisco notes that the interference potential is a function of the field strength levels and transmission duration and not the type of information being sent. The National Telecommunications and Information Administration (NTIA) expresses concern about the Commission's proposed changes. It states that under the proposed rules, systems using voice and data would proliferate, and that because the only timing restriction would be to turn off after five seconds, some devices could be transmitting virtually all the time. It believes that the increased transmission time of such devices as compared to devices that transmit short-duration control signals would increase the likelihood of interference to licensed services.

11. Several parties recommend rule changes beyond those proposed in the *NPRM*. CEA requests that the Commission allow duty cycle averaging over a one second interval instead of the 100 millisecond interval currently specified in the rules, because this would allow for the longer transmissions necessary to complete the setup, synchronization, transmitter identification and sending of a string of data. Enalasys wants the Commission to permit devices used only by trained operators to operate with 10 dB higher power than currently permitted. JCI wants the Commission to reevaluate its policy of permitting more rapid duty cycles or continuous operation only during emergencies involving fire, security or safety of life. It states that the Commission should permit more rapid duty cycles to report on additional conditions that might endanger property, machinery or the operation of systems. JCI believes that requiring transmissions to cease after five seconds is arbitrary, and believes the Commission should delegate authority

to the Office of Engineering and Technology (OET) to waive this requirement at its discretion, although it did not suggest any specific standards that should be considered in granting waivers. Interlogix wants the Commission to permit devices to operate with a total of two seconds of polling time per hour, with no limit on the number of individual transmissions, because it will allow more useful information to be sent, such as the time of entry/exit from a building or the identity of a person entering or leaving. Interlogix also wants the five second transmission time permitted by the rules to be the total transmission time excluding the "off" times between pulses, because it claims that the rule was designed to allow five seconds of continuous transmission, so excluding the "off" times between pulses would allow the same transmission time that the rule originally intended. Interlogix also wants professional installers to be permitted to automatically initiate transmissions longer than five seconds during the set-up of equipment because sophisticated systems often require longer transmissions to initialize them. Ademco supports the Interlogix proposal to allow a total transmission time of two seconds per hour for polling, but it disagrees with both Interlogix and JCI that the five second time limit for transmissions should be changed. It states that this rule is effective in ensuring a quiet band and promotes interference-free operation of part 15 devices. Ademco disagrees with CEA that the duty cycle averaging time should be increased to one second, because it would be contrary to the short-burst principal underlying the shared use of spectrum by devices operating pursuant to the rules. It also disagrees with Enalasys that higher power should be permitted for devices under the control of trained operators because any type of high power operation is incompatible with existing part 15 uses.

12. We find that the restriction on data transmissions by remote control devices in § 15.231(a) should be removed. As noted by the commenting parties, this change will allow manufacturers to make more flexible, imaginative and useful remote control devices. It is not practical to prohibit all data transmissions as NTIA requested. Virtually all modern remote control devices transmit a string of bits, and bits representing identification codes are indistinguishable from bits representing information. Maintaining the prohibition on data transmission inhibits the development of improved

devices that pose no significant risk of harmful interference. We note that the interference potential of a device is a function of the field strength and duration of the transmission, rather than the type of information being sent; and, we are not changing the field strength or transmission timing limits. We decline to remove the prohibition on voice, video and continuous transmissions and on the operation of radio control toys as the Commission proposed in the *NPRM*. There are already a number of provisions in part 15 of the rules that permit voice, video, radio control toys, and continuous transmissions in other frequency bands, so there is no need to establish additional provisions for them under § 15.231(a). On further review, allowing such operation would in fact significantly and unnecessarily expand the goal of the *NPRM*, which was to allow manufacturers to develop devices that transmit identification codes, supplemented with the transmission of some additional data. The net result of the changes we are adopting is that operation under § 15.231(a) will continue to be limited to devices that transmit a control signal, but such devices will be permitted to transmit data with the control signal. They will have to meet the same field strength, timing and other operational limits that currently exist. We believe that these changes adequately address NTIA's concerns about harmful interference from devices transmitting continuously because the rules will continue to explicitly prohibit continuous transmissions. Furthermore, the transmission timing and other restrictions in § 15.231(a), which limit operation to devices that transmit a control signal and prohibit voice, video and the radio control of toys, will preclude continuous data transmissions in any case. No changes are being made to § 15.231(e) because data transmissions are already permitted under this section.

13. We decline to allow duty cycle averaging over a one second interval as requested by CEA, rather than over the 100 millisecond interval currently specified in the rules. The requested change effectively allows higher signal strength, which could result in increased interference potential of devices. The current requirement does not preclude devices from transmitting for more than 100 milliseconds as CEA implies; it simply specifies the time interval for determining the average field strength of a device that uses pulsed transmission. Allowing an average to be calculated over a longer time interval could result in a lower