

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Amendment of Part 95 of the)
Commission's Rules to Establish)
a Very Short Distance)
Two-way Voice Radio Service)

DOCKET FILE COPY ORIGINAL

WT Docket No. 95-102
RM-8499

To: The Commission

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OCT 16 1995

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

RADIO SHACK
DIVISION OF
TANDY CORPORATION

REPLY COMMENTS

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SUMMARY

The Family Radio Service (FRS) promises to be an exciting, innovative radio service that will provide millions of Americans with convenient, low cost, two-way wireless communications capabilities. Comments in this proceeding demonstrate that FRS will serve communications needs of Americans not met by any existing or proposed radio service.

In these Reply Comments, Tandy Corporation (Tandy) reiterates its strong support of the Commission's proposal to establish FRS. Tandy urges the Commission to prohibit interconnection of FRS to the PSTN. Tandy continues to believe that to ensure broad appeal for the service and to avoid burdening the Commission with unnecessary paperwork, FRS should be an unlicensed service. Finally, Tandy addresses various technical issues raised by commenters and, in some cases, suggests refinements of the proposed FRS technical standards.

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REPLY COMMENTS

The Radio Shack Division of Tandy Corporation (Tandy), pursuant to Section 1.415(c) of the Commission's rules,¹ hereby respectfully submits its Reply in response to Comments on the Notice of Proposed Rule Making (NPRM) in the captioned proceeding.²

I. INTRODUCTION

In the NPRM, the Commission proposes the establishment of a new, short-range, two-way, voice radio service know as the Family Radio Service (FRS). Tandy filed Comments in support of the Commission's proposal on October 2, 1995.³ In these Reply

1. 47 C.F.R. § 1.415(c).

2. NPRM released August 2, 1995, FCC 95-261, 10 FCC Rcd 8235 (1995).

3. Tandy initially proposed the establishment of the FRS in its Petition For Rule Making filed on July 20, 1994. See FCC Public Notice Report No. 2023, July 26, 1994.

Comments, Tandy reaffirms its support for the FRS proposal, and addresses issues raised in the comments of other parties to this proceeding.

II. FRS WILL SERVE THE PUBLIC INTEREST

The FRS will provide the American public with convenient, low cost, high quality, short-range communications capabilities not afforded by any existing or proposed radio service. With a transmitter power of just 500 milliwatts, a palm-sized FRS unit will provide clear, reliable and very affordable communications. FRS users will incur no airtime charges or monthly service fees.

With its superior FM communications quality in the Ultra High Frequency (UHF) portion of the radio spectrum, the FRS will enable individuals to maintain close contact in myriad situations. As Tandy explained in its Comments on the NPRM "FRS will enable millions of Americans -- especially small groups such as families, friends and colleagues -- to maintain close contact with only a modest investment." Tandy Comments at 2. The Commission recognizes the broad appeal of FRS noting that it would "be useful to hunters, campers, hikers, bicyclists, and other outdoor activity enthusiasts." NPRM ¶ 7.

Significantly, the FRS will not require the allocation of any new spectrum and will result in more efficient spectrum usage by adding new users on the seven fallow and seven underutilized interstitial channels in the General Mobile Radio Service (GMRS) spectrum.⁴ The Electronic Industries Association (EIA) agrees that "[t]he proposed service

4. The seven assigned interstitial channels are 462.5625 MHz, 462.5875 MHz, 462.6125 MHz, 462.6375 MHz, 462.6625 MHz, 462.6875 MHz and 462.7125 MHz. The seven unassigned interstitial channels are at identical frequency intervals at 467 MHz.

(continued...)

is an appropriate use of underutilized spectrum." EIA Comments at 1 (filed Oct. 2, 1995).⁵

The FRS will provide all of the aforementioned benefits to the public without the burdensome licensing and technical requirements that often deter potential users from many existing radio services.⁶

Comments on the NPRM confirm the Commission's conclusion that FRS will serve the American public well. See NPRM ¶ 7 (enumerating many of the potential

4.(...continued)

In 1988, the Commission released the seven 462 MHz interstitial channels for simplex operation by mobile and small base stations. Report and Order in PR Docket No. 87-265, Amendment of Subparts A and E of Part 95 to Improve the General Mobile Radio Service, 3 FCC Rcd 6554, 6561, ¶ 65 (1988) (GMRS Report & Order). The seven 467 MHz interstitial channels were reserved to permit the GMRS community to present to the Commission a comprehensive plan for enhanced GMRS repeater usage. Id. at ¶ 63. During the seven-year period following the GMRS Report & Order, no plan has been advanced nor has the use of the 467 MHz channels been requested.

5. Tandy's extensive field testing of FRS equipment demonstrated that the GMRS spectrum is well suited to FRS operations. Tandy tested FRS equipment (1) in the Dallas-Ft. Worth metropolitan area pursuant to FCC Special Temporary Authorization, file number S-1246-EX-93, call sign KS2XAZ, effective October 1, 1993, 6-month extension granted effective April 1, 1994, file number S-1451-EX-93 and (2) in Orlando, Florida pursuant to FCC Special Temporary Authorization, file number S-1541-EX-94, call sign KS2XAZ, effective June 11 through June 25, 1994, inclusive.
6. The so-called "Personal Radio Steering Group" (PRSG) makes a serious misstatement regarding Tandy's marketing of GMRS equipment that cannot go unanswered. PRSG alleges that Tandy "advertise[s] GMRS radios for use in the workplace, suggesting that licenses were available to companies and other non-personal entities. PRSG Comments at 10. To the contrary, Tandy's GMRS catalogs, advertising and user manuals clearly inform consumers that GMRS radios are intended for personal use and that an FCC license is required. PRSG also incorrectly states that advertising of GMRS for business use (which Tandy does not do) "contravenes the GMRS Rules" PRSG Comments at 10. At ¶ 13 of the GMRS Report and Order, the Commission did "not preclude or otherwise limit business communications from being transmitted by GMRS licensees." Indeed, at ¶ 14 of the GMRS Report and Order, the Commission stated that "individuals eligible for a new GMRS license may find the service entirely suitable for . . . small business communications."

applications for the FRS). Uniden America Corporation (Uniden) "believes that [FRS] will serve many users by providing a low-cost communications medium for a variety of purposes."⁷ The Telecommunications Industry Association (TIA) notes that the FRS "will provide consumers with a new option in the available menu of wireless communications services."⁸ ALLTEL Mobile Communications, Inc. (ALLTEL) states "that the FRS, as proposed, can fill a narrow market niche and the Commission should be commended for taking action to establish this new service."⁹ EIA states that "FRS will tap into th[e] growing desire and demand for the convenience of wireless technologies."¹⁰ Motorola supports the FRS because it will respond "to the public demand for an affordable, high quality, short range, two-way voice communications alternative."¹¹ REACT International Inc. states that "[m]any of the concepts advanced by this proposal contain merit, and should be implemented in a new, consumer grade radio service such as [the Commission's] proposed FRS."¹² Indeed, GMRS licensees recognize the benefits of FRS. See, e.g., Comments of Edward Boakes at 1 ("This proposal for a Family Radio Service is well founded and will fill a definite need for high-quality half-mile to one mile communications for families, private individuals and groups. ").

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7. Uniden Comments at 5 (filed Sept. 29, 1995).
 8. TIA Comments at 1 (filed Oct. 2, 1995).
 9. ALLTEL Comments at 2 (filed Oct. 2, 1995).
 10. EIA Comments at 3.
 11. Motorola Comments at 1-2 (filed Oct. 2, 1995).
 12. REACT Comments at 9 (filed Oct. 2, 1995).

The record in this proceeding establishes that FRS will serve an unmet consumer demand for an inexpensive, high quality, short-range communications medium and thus will serve the public interest, convenience and necessity. By establishing this innovative and much-needed service, the Commission will further its mandate to "generally encourage the larger and more effective use of radio in the public interest." 47 U.S.C. § 303(g).

III. FRS SHOULD NOT BE INTERCONNECTED WITH THE PSTN

The Commission proposes, and Tandy agrees, that FRS should not be interconnected with the public switched telephone network (PSTN). See Proposed Section 95.193(e) ("No FRS unit may be interconnected to the public switched telephone network."). With the sole exception of the EIA (see EIA Comments at 3), parties commenting on this issue uniformly agree that FRS should not be interconnected with the PSTN.¹³ See, e.g., Comments of Pacific Bell Mobile Services at 2 ("In the interest of regulatory symmetry, the Commission should not extend interconnection to the PSN to FRS, even if feasible."). In its Comments on the NPRM at 4, Tandy explained that "interconnection of the FRS with the PSTN could result in high FRS equipment prices and airtime charges, the absence of which are hallmarks of the service." Tandy agrees with Uniden that interconnection could "disrupt the intended use for FRS by over utilizing the available channels." Uniden Comments at 4. Given the many services already interconnected to the PSTN (and soon to be interconnected, such as PCS), there is no discernible need for FRS to be interconnected with the PSTN.

13. The National Emergency Number Association (NENA) also opposes interconnection but suggests that, if interconnection is allowed, FRS devices be capable of providing 9-1-1 access to public safety answering points. NENA Comments at 2.

IV. FRS SHOULD BE AN UNLICENSED SERVICE

The Commission wisely proposes that FRS be an unlicensed radio service. See NPRM ¶ 9 ("We can not foresee any regulatory purpose that would be served by requiring operator or station licenses in such a radio service."). An unlicensed FRS will avoid burdening FRS users (and Commission staff) with an unwieldy licensing scheme.¹⁴ Tandy agrees with Motorola that "individual consumers are disinclined to participate in radio services that require licensing," and that "it is imperative that the service be unlicensed." Motorola Comments at 6-7. As TIA notes, "the Commission's sometimes difficult licensing process . . . may prove intimidating to potential novice users of the [FRS] and will likely dissuade some customers from investing in equipment." TIA Comments at 2. Unlicensed FRS will introduce the benefits of two-way radio communications to millions of Americans.

PRSG erroneously asserts that the Commission is without authority to establish FRS as an unlicensed service. PRSG Comments at 15-16. Section 307(e)(1) of the Communications Act provides that "the Commission may by rule authorize the operation of radio stations without individual licenses in the . . . citizens band radio service if the Commission determines that such authorization serves the public interest, convenience and

14. When Congress authorized delicensing of the CB and Radio Control radio services, it found that delicensing would "produce significant savings without impairing important regulatory interests." H.R. Conf. Rep. No. 765, 97th Cong., 2d Sess. 36 (1982), reprinted in 1982 U.S.C.C.A.N. 2261, 2280. The Commission, in turn, concluded "that licensing in these services serves only a minimal function . . . one better served by the type acceptance and operating rules and enforcement of those rules." Elimination of Individual Station Licensing in Radio Control Radio Service and Citizens Band Radio Service, PR Docket No. 82-799, 48 Fed. Reg. at 24,886 (1983). The Commission also found that delicensing "would result in significant cost savings and in substantial administrative savings." Id. at 24,887.

necessity."¹⁵ Section 307(e)(3) of the Communications Act provides that "'citizens band radio service' shall have the meaning[] given [it] by the Commission by rule." 47 U.S.C. § 307(e)(3). In this proceeding, the Commission merely is revising its definition of the Citizens Band Radio Service,¹⁶ as it plainly has the authority to do under Sections 307(e)(1) & (3) of the Communications Act, to include FRS. PRSG mistakenly asserts that the Commission is somehow committing "an abuse of administrative discretion" by proposing to "delicense a service" PRSG Comments at 16. The Commission is not proposing to delicense GMRS or any other existing radio service in the NPRM. Rather, the Commission proposes to add FRS to the previously delicensed CB service.

V. SELECTIVE CALLING

Tandy believes that selective calling will be a very appealing and useful feature of FRS. Family members, for example, could stay in contact at a shopping mall without having to monitor all transmissions received by their FRS units; attention would only be required when their FRS units were activated by another family member's selective calling signal.

Some FRS users will want selective calling, while others may not. Accordingly, Tandy and prospective manufacturers of FRS equipment support the Commission's proposal to allow, but not require, selective calling capabilities in FRS units. See NPRM ¶ 13. Uniden states "that the decision to incorporate selective calling, or not,

15. 47 U.S.C. § 307(e)(1).

16. 47 C.F.R. § 95.401.

should be left to the manufacturers." Uniden Comments at 4. Cobra Electronics Corporation (Cobra) "agrees that selective calling should be optional" Cobra Comments at 2 (filed Sept. 29, 1995). EIA states that "the Commission should allow the marketplace to gauge consumer demand and permit the production and use of both less expensive, non-selective units and more expensive, selective units." EIA Comments at 4. "Motorola supports the FCC's decision to allow the use of selective calling techniques on a voluntary basis." Motorola Comments at 9.

The Commission should avoid confining manufacturers to a particular selective calling protocol so that they will be free to incorporate the latest technologies into FRS devices. Uniden explains that "manufacturers have many choices for implementing the method and design of selective calling features . . . [and thus it does] not believe that the Commission should specify any interoperable selective calling standards in the proposed FRS." Uniden Comments at 4. Cobra concurs "that it is not necessary to specify the type of selective calling." Cobra Comments at 2. Tandy agrees with Motorola that "any attempt to [establish such standards] . . . would only serve to delay the introduction of this service to the public." Motorola Comments at 9.

Tandy strongly opposes PRSG's suggestion that the Commission prohibit the use of CTCSS (continuous tone coded subaudible squelch) or DCS (digitally coded squelch) encoding in the 467 MHz band. PRSG Comments at 9. PRSG posits that use of CTCSS or DCS might inadvertently open a GMRS repeater. Since FRS operations will not be co-channel with GMRS repeater operations, there is little possibility that such operations would open a GMRS repeater. Moreover, if the Commission adopts Motorola's suggestions for

tighter frequency tolerance and deviation standards (supported by Tandy, infra), there will be no possibility of interference with GMRS repeater operations.

VI. FRS WILL NOT CAUSE HARMFUL INTERFERENCE TO UHF CHANNEL 14 OR TO ECG MONITORING SYSTEMS

EIA notes that there is a possibility that FRS units might interfere with UHF TV Channel 14 (470-476 MHz). EIA Comments at 4. Since GMRS equipment with up to ten times (and GMRS repeaters with up to one-hundred times) the authorized power of FRS equipment already operates in the 462/467 MHz FRS frequencies, Tandy foresees no significant increase in the potential for interference with Channel 14 by new low power FRS operations. In any event, the refined FRS technical standards supported by Tandy, infra, will preclude the possibility of any harmful interference with Channel 14 operations.

Spacelabs Medical, Inc. (SMI) suggests that the operation of low power FRS units on FRS Channels 7 (462.7125 MHz) and 14 (467.7125 MHz) might create interference with portable electrocardiogram (ECG) monitoring systems. SMI Comments at 5.¹⁷ While Tandy is not insensitive to SMI's concerns, the reality is that much higher powered GMRS equipment already operates on Channel 7. SMI has offered no evidence, anecdotal or otherwise, that such GMRS operations (again, at authorized power levels up to ten times greater than FRS) have ever caused interference with ECG monitoring systems. Thus, there is no apparent basis for SMI's concern that low powered FRS operations on either Channel 7 or Channel 14 will interfere with such systems.

17. SMI explains that ECG systems are passive monitoring devices that record heart muscle contractions. See SMI Comments at 2.

SMI also suggests that FRS units may not be suitable for use in hospitals because of their 500 milliwatt power. SMI Comments at 6. While hospitals may want to limit various types of radio communications on their grounds, either by FRS or otherwise, there is no reason to expect that FRS would pose a greater interference potential than higher power equipment in the Public Safety Radio Services (police and emergency medical for example, see 47 C.F.R. §§ 90.19 & 90.27) which is used routinely in hospitals.

VII. TECHNICAL ISSUES

As explained below, Tandy believes that certain refinements of the Commission's proposed technical standards for FRS would serve the public interest.

A. Antennae Design

Proposed Section 95.645 provides that "[t]he antenna of each FRS unit . . . must be an integral part [emphasis added] of the transmitter . . . must have no gain . . . and must be vertically polarized." Tandy respectfully requests that the Commission clarify that by "integral part," the Commission means FRS antennas must be nondetachable. Tandy opposes PRSG's suggestion that FRS antennas "be internal to the radio case itself." PRSG Comments at 6. Antenna performance would be degraded seriously by internalizing an FRS antenna since RF emissions would be absorbed by the user's hand. PRSG attempts to support its proposal noting that some cordless phones employ internal antennas; an FRS unit, however, is intended to have a much greater range than a cordless phone. Moreover, even though some cordless phone manufacturers previously have employed internal antennas, Tandy understands that this practice was discontinued because of poor equipment performance.

Tandy does agree with PRSG that it may not be necessary to require vertical polarization of FRS antennas since polarity generally is lost when signals strike objects in the environment. PRSG Comments at 6-7. Indeed, by not designating a specific polarity requirement the Commission would free manufacturers to design antennas best suited for particular FRS units.

Proposed Section 95.637(d) provides that "No FRS unit . . . shall exceed 0.500 W Carrier power . . . when transmitting emission type F3E." Tandy supports Motorola's request that the Commission "clarify that the maximum permitted power of 0.500 watts be specified in terms of ERP measured at the unit's antenna." Motorola Comments at 9. By measuring output as ERP at a unit's antenna, manufacturers could use lower power (and more economical) transmitters and take advantage of antenna gain up to a maximum 0.500 watts ERP. Accordingly, Tandy respectfully requests that Section 95.645 be revised to exclude the "no gain" prohibition.

B. Frequency Deviation And Tolerance

In order to better ensure interference protection to the primary GMRS channels, Motorola suggests that proposed "Section 95.635 be modified to limit [frequency] deviation to a maximum of 2.5 kHz and limit audio frequency response to a maximum of 3.125 kHz" Motorola Comments at 8. See PRSG Comments at 14 (noting that interference with GMRS repeaters is "minimized by reducing the transmitter deviation to less than 3 kHz"). Although Tandy's extensive testing of FRS units did not reveal interference with users of the primary GMRS channels, Tandy encourages the Commission to consider

Motorola's proposal since it is "consistent with designs intended to be introduced into the private land mobile 'refarmed' frequency bands below 800 MHz." Motorola Comments at 8.

Tandy also concurs with Motorola's suggestion that the Commission reduce frequency tolerance from .0005 % to .00025 % and revise proposed Section 95.627(b) accordingly. Motorola Comments at 9. When coupled with the reduced 2.5 kHz frequency deviation that Tandy supports, the tighter frequency tolerance would result in an FRS channel bandwidth of 11.25 kHz.¹⁸ Such a bandwidth would obviate the concerns expressed by PRSG (and some individual GMRS users) regarding the potential for interference with GMRS main channels and repeater operations.

C. Automatic Transmitter Identification Code

Tandy strongly opposes PRSG's suggestion that FRS transmitters "be required to employ a unique Automatic Transmitter Identification Code (ATIC)." PRSG Comments at 7. PRSG's suggestion presupposes that a GMRS user would need to locate the source of interference from an FRS transmitter: adoption of the frequency tolerance and deviation standards proposed by Motorola, and supported by Tandy supra, would preclude such interference. Use of ATIC codes would needlessly increase the cost of FRS units, require the establishment of an administratively complex database, and generally serve no useful purpose that outweighs these burdens.

18. Several commenters have suggested the use of 6.25 kHz channels for FRS. See Comments of Michael T. McKenna and Comments of Susan L. Feit (both filed Oct. 2, 1995). Tandy believes that such narrowband channels would be inappropriate for FRS since they would result in higher prices for FRS equipment and may degrade the quality of FRS communications.

D. External Devices

Tandy opposes PRSG's suggestion that all external couplings (e.g., conventional external microphones) be prohibited. PRSG Comments at 8. Proposed Section 95.194(c) safeguards against misuse of external devices by prohibiting individuals from "attach[ing] any antenna, power amplifier, or other apparatus [emphasis added] to an FRS unit that has not been FCC certified as part of that FRS unit." Many applications of FRS, bicycling for example, would be enhanced by the ability to use a talk & listen headset. Indeed, the use of hands-free transmission is widely recognized as a safety feature of cellular car phones and such operation (through the use of a headset and VOX) would enhance the safety of FRS as well. Tandy respectfully requests that the Commission delete the "or other apparatus" language in Section 95.194(c), and clarify that the use of VOX equipment, talk & listen headsets, and any other equipment compatible with FRS units that does not result in a violation of the FRS rules is permitted.¹⁹ In order to address PRSG's concern regarding the possibility that an FRS unit might be used as a repeater, Tandy respectfully suggests that the Commission prohibit the attachment of any device to an FRS unit that would enable it to function as a repeater.

E. Transmission Time Limits

Tandy supports a reasonable rule limitation (5 minutes for example) on the time period for continuous FRS transmissions. There is no need, as PRSG suggests (PRSG Comments at 9), for hardware realization of a time limit. Even if the Commission were to

19. Tandy respectfully requests that the Commission clarify that the use of VOX internal to an FRS unit is permissible.

adopt such a hardware requirement, Tandy is adamantly opposed to the adoption of any "latency reset" period. Such a delay would be disconcerting to users. Moreover, should an emergency arise, the delay could pose a safety risk.

VIII. CONCLUSION

The record in this proceeding demonstrates that the Family Radio Service will provide Americans with a low cost, short range, wireless communications capability not provided by any existing or proposed radio service. As an unlicensed, user-friendly radio service, FRS is sure to attract members of the public who may be deterred by the often complex licensing and technical requirements of other radio services. In order to ensure the maximum utility of FRS, Tandy respectfully requests that the Commission adopt the technical refinements suggested above.

WHEREFORE, for the reasons stated in its Petition For Rule Making, its Reply to comments thereon, its Comments on the NPRM, and those stated above, and

particularly in view of the many benefits of FRS to the public, Tandy Corporation respectfully requests that the Commission establish a new Family Radio Service.

October 16, 1995

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Richard J. Arsenault, hereby certify that on this 16th day of October 1995, I caused a copy of the attached Reply Comments of Tandy Corporation to be served by hand delivery to the following:

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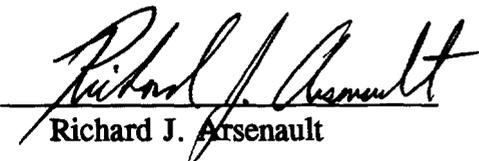
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