

From: Kenneth Nichols [KNICHOLS@fcc.gov]  
Sent: Tuesday, August 01, 2000 2:16 PM  
To: Dwayne.Campbell@radioshack.com  
Cc: Bruce Franca; Julius Knapp; Rich Fabina; Raymond Laforge;  
PAUL.OPITZ@radioshack.com; Sid@timcoengr.com  
Subject: Re: FCC ID: AAO2101850

Dwayne,

As I stated in my last email, we felt that the concept for a device as outlined below would comply with the integral antenna Rules. However, to ensure the WTB supported that decision, we requested their views. They have just replied and agree with the Laboratory that the concept for this device does comply with the integral antenna Rules. Thanks for your patience during our review.  
Ken

Dwayne Campbell <Dwayne.Campbell@radioshack.com> 07/20/00 12:02PM >>>

We just received communication from our manufacturer, Tekcom Industries, indicating that our FRS model 21-1850 (FCC ID AAO21-1850) manufactured for RadioShack was rejected by the Commission. We are concerned that the design of this product is being confused with a similar product that was properly rejected by the Commission in 1998. While we understand and support the Commission's decision to reject the prior product since it did not comply with the rules, we would like to make sure you understand the differences between the earlier non-compliant product and our current application, which we feel complies with the intent and letter of the rules.

The prior non-compliant FRS radio permitted connection of an external antenna by disconnecting the original antenna and connecting a remote external antenna. The user connection permitted easy substitution of the supplied external antenna with a non-conforming high gain antenna, signal amplifier, or other device not permitted by the FRS rules. By contrast the 21-1850 is a FRS product configured for mobile use. It consists of a transmitter and all RF circuitry contained within a single housing. The antenna is integral to that housing; it can not be detached from the housing by the user. The control circuitry, display, speaker and microphone are contained in a second housing that is permanently attached to the transmitter housing with a non-detachable cable (see attached block diagram). It is not possible for the user to replace, extend, or modify the cable between the microphone housing and the transmitter housing. By designing the unit in this way, we feel that this product complies with the strictest interpretation of the paragraph §95.647 which states:

"FRS unit and R/C transmitter antenna. - The antenna of each FRS unit, and the antenna of each R/C station transmitting in the 72-76 MHz band, must be an integral part of the transmitter. The antenna must have no gain (as compared to a half-wave dipole) and must be vertically polarized."

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and further clarification issued in the Memorandum Opinion and Order 98-293, paragraph 29 adopted October 30, 1998:

"29. We agree with Motorola that as originally envisioned, FRS units would use relatively inefficient antennas that were integral, i.e. either permanently attached or designed into, the unit. We intended the term "integral" in this context to have its common meaning (i.e. essential for completion; whole; entire; intact). We also agree with Motorola that the plain language of Section 95.194© of the rules is clear and that approving units that are easily modified to allow other antennas or devices to be attached to the unit violates the rule and allows users of FRS units to defeat its purpose. Additionally, FRS units that include antennas that can be detached by unscrewing or unplugging the antenna from the unit allow the consumer to easily interconnect the FRS unit to an external antenna, power amplifier or other readily available apparatus. We note that consumer attached devices such as these are not type accepted with the FRS unit, and, therefore, can not be used with it."

By designing the antenna integral to the transmitter and its housing, it is not possible for the user to connect the transmitter to non-conforming devices such as high gain antennas, signal amplifiers, or other devices not permitted by the FRS rules to extend the range or improve the performance of the FRS radio.

Our intent for this product is to provide a form factor that is more convenient for mobile use and also to respond to consumer complaints that handheld units experience reduction in range when used inside a vehicle. This product continues to comply with the ERP limits in 95.639 which states:

"No FRS unit, under any condition of modulation, shall exceed 0.500 W effective radiated power (ERP)."

The range of this product is consistent with the range of a handheld FRS units operated under similar conditions when operated outside the vehicle.

Based on this clarification, we request the Commission to reconsider their position regarding this application. We would like to discuss further with you by telephone to ensure that we have clearly explained the product configuration and that we fully understand the Commission's interpretation of the rules.

Best Regards,

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