

## § 95.647

must be certificated with the modules. Each module must contain all of the frequency determining circuitry including the oscillator. Plug-in crystals are not considered modules and must not be accessible to the user.

[53 FR 36789, Sept. 22, 1988. Redesignated at 61 FR 28769, June 6, 1996, and further redesignated at 61 FR 46567, Sept. 4, 1996; 63 FR 36610, July 7, 1998]

### § 95.647 FRS unit and R/C transmitter antennas.

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.

[61 FR 28770, June 6, 1996. Redesignated at 61 FR 46567, Sept. 4, 1996]

### § 95.649 Power capability.

No CB, R/C, LPRS, FRS, MedRadio, MURS, or WMTS unit shall incorporate provisions for increasing its transmitter power to any level in excess of the limits specified in § 95.639.

[74 FR 22708, May 14, 2009]

### § 95.651 Crystal control required.

All transmitters used in the Personal Radio Services must be crystal controlled, except an R/C station that transmits in the 26–27 MHz frequency band, a FRS unit, a LPRS unit, a MURS unit, a MedRadio transmitter, or a WMTS unit.

[74 FR 22708, May 14, 2009]

### § 95.653 Instructions and warnings.

(a) A user's instruction manual must be supplied with each transmitter marketed, and one copy (a draft or preliminary copy is acceptable provided a final copy is provided when completed) must be forwarded to the FCC with each request for certification.

(b) The instruction manual must contain all information necessary for the proper installation and operation of the transmitter including:

(1) Instructions concerning all controls, adjustments and switches that may be operated or adjusted without resulting in a violation of the rules.

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(2) Warnings concerning any adjustment that could result in a violation of the rules or that is recommended to be performed by or under the immediate supervision and responsibility of a person certified as technically qualified to perform transmitter maintenance and repair duties in the private land mobile services and fixed services by an organization or committee representative of users of those services.

(3) Warnings concerning the replacement of any transmitter component (crystal, semiconductor, etc.) that could result in a violation of the rules.

(4) For a CMRS transmitter, warnings concerning licensing requirements and information concerning license application procedures.

[53 FR 36789, Sept. 22, 1988. Redesignated at 61 FR 28769, June 6, 1996, and further redesignated at 61 FR 46567, Sept. 4, 1996; 63 FR 36610, July 7, 1998]

### § 95.655 Frequency capability.

(a) No transmitter will be certificated for use in the CB service if it is equipped with a frequency capability not listed in § 95.625, and no transmitter will be certificated for use in the GMRS if it is equipped with a frequency capability not listed in § 95.621, unless such transmitter is also certificated for use in another radio service for which the frequency is authorized and for which certification is also required. (Transmitters with frequency capability for the Amateur Radio Services and Military Affiliate Radio System will not be certificated.)

(b) All frequency determining circuitry (including crystals) and programming controls in each CB transmitter and in each GMRS transmitter must be internal to the transmitter and must not be accessible from the exterior of the transmitter operating panel or from the exterior of the transmitter enclosure.

(c) No add-on device, whether internal or external, the function of which is to extend the transmitting frequency capability of a CB transmitter beyond its original capability, shall be manufactured, sold or attached to any CB station transmitter.

(d) No transmitter will be certificated for use in MURS if it is equipped

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with a frequency capability not listed in §95.632.

[53 FR 47718, Nov. 25, 1988. Redesignated at 61 FR 28769, June 6, 1996, and further redesignated at 61 FR 46567, Sept. 4, 1996 and amended at 63 FR 36611, July 7, 1998; 67 FR 63290, Oct. 11, 2002; 69 FR 32886, June 14, 2004]

### ADDITIONAL CERTIFICATION REQUIREMENTS FOR CB TRANSMITTERS

#### §95.665 [Reserved]

#### §95.667 CB transmitter power.

The dissipation rating of all the semiconductors or electron tubes which supply RF power to the antenna terminals of each CB transmitter must not exceed 10 W. For semiconductors, the dissipation rating is the greater of the collector or device dissipation value established by the manufacturer of the semiconductor. These values may be temperature de-rated by no more than 50 °C. For an electron tube, the dissipation rating is the Intermit-tent Commercial and Amateur Service plate dissipation value established by the manufacturer of the electron tube.

[53 FR 36789, Sept. 22, 1988. Redesignated at 61 FR 28769, June 6, 1996, and further redesignated at 61 FR 46567, Sept. 4, 1996]

#### §95.669 External controls.

(a) Only the following external transmitter controls, connections or devices will normally be permitted in a CB transmitter:

- (1) Primary power connection. (Circuitry or devices such as rectifiers, transformers, or inverters which provide the nominal rated transmitter primary supply voltage may be used without voiding the transmitter certification.)
- (2) Microphone connection.
- (3) Antenna terminals.
- (4) Audio frequency power amplifier output connector and selector switch.
- (5) On-off switch for primary power to transmitter. This switch may be combined with receiver controls such as the receiver on-off switch and volume control.
- (6) Upper/lower sideband selector switch (for a transmitter that transmits emission type H3E, J3E or R3E).
- (7) Carrier level selector control (for a transmitter that transmits emission

type H3E, J3E or R3E.) This control may be combined with the sideband selector switch.

(8) Channel frequency selector switch.

(9) Transmit/receive selector switch.

(10) Meter(s) and selector switch(es) for monitoring transmitter performance.

(11) Pilot lamp(s) or meter(s) to indicate the presence of RF output power or that the transmitter control circuits are activated to transmit.

(b) The FCC may authorize additional controls, connections or devices after considering the functions to be performed by such additions.

[53 FR 36789, Sept. 22, 1988. Redesignated at 61 FR 28769, June 6, 1996, and further redesignated at 61 FR 46567, Sept. 4, 1996; 63 FR 36611, July 7, 1998]

#### §95.671 Serial number.

The serial number of each CB transmitter must be engraved on the transmitter chassis.

[53 FR 36789, Sept. 22, 1988. Redesignated at 61 FR 28769, June 6, 1996, and further redesignated at 61 FR 46567, Sept. 4, 1996]

#### §95.673 Copy of rules.

A copy of part 95, subpart D, of the FCC Rules, current at the time of packing of the transmitter, must be furnished with each CB transmitter marketed.

[53 FR 36789, Sept. 22, 1988. Redesignated at 61 FR 28769, June 6, 1996, and further redesignated at 61 FR 46567, Sept. 4, 1996]

### APPENDIX 1 TO SUBPART E OF PART 95— GLOSSARY OF TERMS

The definitions used in this subpart E are:  
*Authorized bandwidth.* Maximum permissible bandwidth of a transmission.

*Carrier power.* Average TP during one unmodulated RF cycle.

*CB.* Citizens Band Radio Service.

*CB transmitter.* A transmitter that operates or is intended to operate at a station authorized in the CB.

*Channel frequencies.* Reference frequencies from which the carrier frequency, suppressed or otherwise, may not deviate by more than the specified frequency tolerance.

*Crystal.* Quartz piezo-electric element.

*Crystal controlled.* Use of a crystal to establish the transmitted frequency.

*dB.* Decibels.