

NON emission must not exceed 90 seconds; and any transmission of A3E or NON emissions must be followed by at least three minutes of A3X emission.

(i) ELTs manufactured on or after October 1, 1988, must have a clearly defined carrier frequency distinct from the modulation sidebands for the mandatory emission, A3X, and, if used, the A3E or NON emissions. On 121.500 MHz at least thirty per cent of the total power emitted during any transmission cycle with or without modulation must be contained within plus or minus 30 Hz of the carrier frequency. On 243.000 MHz at least thirty percent of the total power emitted during any transmission cycle with or without modulation must be contained within plus or minus 60 Hz of the carrier frequency. Additionally, if the type of emission is changed during transmission, the carrier frequency must not shift more than plus or minus 30 Hz on 121.500 MHz and not more than plus or minus 60Hz on 243.000 MHz. The long term stability of the carrier frequency must comply with the requirements in § 87.133 of this part.

(j) Transmitters used at Aircraft earth stations must employ BPSK for transmission rates up to and including 2400 bits per second, and QPSK for higher rates.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11721, Mar. 22, 1989; 56 FR 11518, Mar. 19, 1991; 57 FR 45749, Oct. 5, 1992]

**§ 87.143 Transmitter control requirements.**

(a) Each transmitter must be installed so that it is not accessible to, or capable of being operated by persons other than those authorized by the licensee.

(b) Each station must be provided with a control point at the location of the transmitting equipment, unless otherwise specifically authorized. Except for aeronautical enroute stations governed by paragraph (e) of this section, a control point is the location at which the radio operator is stationed. It is the position at which the transmitter(s) can immediately be turned off.

(c) Applicants for additional control points at aeronautical advisory (unicom) stations must specify the location of each proposed control point.

(d) Except for aeronautical enroute stations governed by paragraph (f) of this section, the control point must have the following facilities installed:

(1) A device that indicates when the transmitter is radiating or when the transmitter control circuits have been switched on. This requirement does not apply to aircraft stations;

(2) Aurally monitoring of all transmissions originating at dispatch points;

(3) A way to disconnect dispatch points from the transmitter; and

(4) A way to turn off the transmitter.

(e) A dispatch point is an operating position subordinate to the control point. Dispatch points may be installed without authorization from the Commission, and dispatch point operators are not required to be licensed.

(f) In the aeronautical enroute service, the control point for an automatically controlled enroute station is the computer facility which controls the transmitter. Any computer controlled transmitter must be equipped to automatically shut down after 3 minutes of continuous transmission of an unmodulated carrier.

**§ 87.145 Acceptability of transmitters for licensing.**

(a) Each transmitter must be certificated for use in these services, except as listed in paragraph (c) of this section. However, aircraft stations which transmit on maritime mobile frequencies must use transmitters certificated for use in ship stations in accordance with part 80 of this chapter. Certification under part 80 is not required for aircraft earth stations transmitting on maritime mobile-satellite frequencies. Such stations must be certificated under part 87.

(b) Some radio equipment installed on air carrier aircraft must meet the requirements of the Commission and the requirements of the FAA. The FAA requirements may be obtained from the FAA, Aircraft Maintenance Division, 800 Independence Ave., SW., Washington, DC 20591.

(c) The equipment listed below is exempted from certification. The operation of transmitters which have not been certificated must not result in harmful interference due to the failure