

through (j), (r), (t), and (ff); and 87.475(b)(6) through (b)(11) may be assigned to radionavigation land test stations for the testing of aircraft transmitting equipment that normally operate on these frequencies and for the testing of land-based receiving equipment that operate with airborne radionavigation equipment.

(2) The frequencies available for assignment to radionavigation land test stations for the testing of airborne receiving equipment are 108.000 and 108.050 MHz for VHF omni-range; 108.100 and 108.150 MHz for localizer; 334.550 and 334.700 MHz for glide slope; 978 and 979 MHz (X channel)/1104 MHz (Y channel) for DME; 978 MHz for Universal Access Transceiver; 1030 MHz for air traffic control radar beacon transponders; 1090 MHz for Traffic Alert and Collision Avoidance Systems (TCAS); and 5031.0 MHz for microwave landing systems. Additionally, the frequencies in paragraph (b) of this section may be assigned to radionavigation land test stations after coordination with the FAA. The following conditions apply: after coordination with the FAA. The following conditions apply:

(i) The maximum power authorized on the frequencies 108.150 and 334.550 MHz is 1 milliwatt. The maximum power authorized on all other frequencies is one watt.

(ii) The pulse repetition rate (PRR) of the 1030 MHz ATC radar beacon test set will be 235 pulses per second (pps) ±5pps.

(iii) The assignment of 108.000 MHz is subject to the condition that no interference will be caused to the reception of FM broadcasting stations and stations using the frequency are not protected against interference from FM broadcasting stations.

(d) *Frequencies available for ELT test stations.* The frequencies available for assignment to ELT test stations are 121.600, 121.650, 121.700, 121.750, 121.800, 121.850, and 121.900 MHz. Licensees must:

(1) Not cause harmful interference to voice communications on these frequencies or any harmonically related frequency.

(2) Coordinate with the appropriate FAA Regional Spectrum Management

Office prior to each activation of the transmitter.

(e) *Frequencies available for differential GPS stations.* Frequencies in the 112–118 MHz band may be assigned to Special Category I (SCAT-I) ground stations for differential GPS data links.

(1) The frequencies available are on 25 kHz centers with the lowest assignable frequency being centered at 112.000 MHz and the highest assignable frequency being centered at 117.950 MHz.

(2) Applicants must coordinate a frequency, time slot assignment, and three-letter identifier with the FAA and provide this information to the Commission upon application.

[53 FR 28940, Aug. 1, 1988, as amended at 54 FR 11721, Mar. 22, 1989; 63 FR 68958, Dec. 14, 1998; 64 FR 27476, May 20, 1999; 69 FR 32886, June 14, 2004; 71 FR 70680, Dec. 6, 2006; 78 FR 61207, Oct. 3, 2013]

EDITORIAL NOTE: At 80 FR 38911, July 7, 2015, §87.475 was amended by adding paragraphs (b)(11) and (14), however these paragraphs already existed, and the amendment could not be incorporated.

#### § 87.477 Condition of grant for radionavigation land stations.

Radionavigation land stations may be designated by the FAA as part of the National Airspace System. Stations so designated will be required to serve the public under IFT conditions. This condition of grant is applicable to all radionavigation land stations.

#### § 87.479 Harmful interference to radionavigation land stations.

(a) Military or other Government stations have been authorized to establish wide-band systems using frequency-hopping spread spectrum techniques in the 960–1215 MHz band. Authorization for a Joint Tactical Information Distribution Systems (JTIDS) has been permitted on the basis of non-interference to the established aeronautical radionavigation service in this band. In order to accommodate the requirements for the system within the band, restrictions are imposed. Transmissions will be automatically prevented if:

(1) The frequency-hopping mode fails to distribute the JTIDS spectrum uniformly across the band;

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(2) The radiated pulse varies from the specified width of 6.4 microseconds  $\pm 5\%$ ;

(3) The energy radiated within  $\pm 7$  MHz of 1030 and 1090 MHz exceeds a level of 60 dB below the peak of the JTIDS spectrum as measured in a 300 kHz bandwidth. The JTIDS will be prohibited from transmitting if the time slot duty factor exceeds a 20 percent duty factor for any single user and a 40 percent composite duty factor for all JTIDS emitters in a geographic area.

(b) If radionavigation systems operating in the 960–1215 MHz band experience interference or unexplained loss of equipment performance, the situation must be reported immediately to the nearest office of the FAA, the National Telecommunications and Information Administration, Washington, DC 20504, or the nearest Federal Communications Commission field office. The following information must be provided to the extent available:

- (1) Name, call sign and category of station experiencing the interference;
- (2) Date and time of occurrence;
- (3) Geographical location at time of occurrence;
- (4) Frequency interfered with;
- (5) Nature of interference; and
- (6) Other particulars.

**§ 87.481 Unattended operation of domestic radiobeacon stations.**

(a) Radiobeacons may be licensed for unattended operation. An applicant must comply with the following:

(1) The transmitter is crystal controlled and specifically designed for radiobeacon service and capable of transmitting by self-actuating means;

(2) The emissions of the transmitter must be continuously monitored by a licensed operator, or by a direct positive automatic monitor, supplemented by aural monitoring at suitable intervals;

(3) If as a result of aural monitoring it is determined that a deviation from the terms of the station license has occurred, the transmitters must be disabled immediately by a properly authorized person. If automatic monitoring is used, the monitor must insure that the operation of the transmitter meets the license terms or is disabled;

(4) A properly authorized person must be able to reach the transmitter and disable it in a reasonable amount of time, so as not to adversely affect life or property in the air;

(5) The equipment must be inspected at least every 180 days. Results of inspections must be kept in the station maintenance records;

(6) The transmitter is not operable by or accessible to, other than authorized persons;

(7) The transmitter is in a remote location.

(b) Authority for unattended operation must be expressly stated in the station license.

[53 FR 28940, Aug. 1, 1988, as amended at 63 FR 68958, Dec. 14, 1998]

**§ 87.483 Audio visual warning systems.**

An audio visual warning system (AVWS) is a radar-based obstacle avoidance system. AVWS activates obstruction lighting and transmits VHF audible warnings to alert pilots of potential collisions with land-based obstructions. The AVWS operations are limited to locations where natural and man-made obstructions exist. The continuously operating radar calculates the location, direction and groundspeed of nearby aircraft that enter one of two warning zones reasonably established by the licensee. As aircraft enter the first warning zone, the AVWS activates obstruction lighting. If the aircraft continues toward the obstacle and enters the second warning zone, the VHF radio transmits an audible warning describing the obstacle.

(a) Radiodetermination (radar) frequencies. Frequencies authorized under § 87.475(b)(8) of this chapter are available for use by an AVWS. The frequency coordination requirements in § 87.475(a) of this chapter apply.

(b) VHF audible warning frequencies. Frequencies authorized under § 87.187(j), § 87.217(a), § 87.241(b), and § 87.323(b) (excluding 121.950 MHz) of this chapter are available for use by an AVWS. Multiple frequencies may be authorized for an individual station, depending on need and the use of frequencies assigned in the vicinity of a proposed AVWS facility. Use of these frequencies is subject to the following limitations: