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peak output power is at least 18.5 dbw (70 watts).

(v) For any class of ATCRBS or any class of Mode S transponders, verify that the maximum RF peak output power does not exceed 27.0 dbw (500 watts).

NOTE: The tests in (e) through (j) apply only to Mode S transponders.

(e) Mode S Diversity Transmission Channel Isolation: For any class of Mode S transponder that incorporates diversity operation, verify that the RF peak output power transmitted from the selected antenna exceeds the power transmitted from the nonselected antenna by at least 20 db.

(f) Mode S Address: Interrogate the Mode S transponder and verify that it replies only to its assigned address. Use the correct address and at least two incorrect addresses. The interrogations should be made at a nominal rate of 50 interrogations per second.

(g) Mode S Formats: Interrogate the Mode S transponder with uplink formats (UF) for which it is equipped and verify that the replies are made in the correct format. Use the surveillance formats UF = 4 and 5. Verify that the altitude reported in the replies to UF = 4 are the same as that reported in a valid ATCRBS Mode C reply. Verify that the identity reported in the replies to UF = 5 are the same as that reported in a valid ATCRBS Mode 3/A reply. If the transponder is so equipped, use the communication formats UF = 20, 21, and 24.

(h) Mode S All-Call Interrogations: Interrogate the Mode S transponder with the Mode S-only all-call format UF = 11, and the ATCRBS/Mode S all-call formats (1.6 microsecond P<sub>4</sub> pulse) and verify that the correct address and capability are reported in the replies (downlink format DF = 11).

(i) ATCRBS-Only All-Call Interrogation: Interrogate the Mode S transponder with the ATCRBS-only all-call interrogation (0.8 microsecond P<sub>4</sub> pulse) and verify that no reply is generated.

(j) Squitter: Verify that the Mode S transponder generates a correct squitter approximately once per second.

(k) Records: Comply with the provisions of § 43.9 of this chapter as to content, form, and disposition of the records.

[Amdt. 43-26, 52 FR 3390, Feb. 3, 1987; 52 FR 6651, Mar. 4, 1987, as amended by Amdt. 43-31, 54 FR 34330, Aug. 18, 1989]

**PART 45—IDENTIFICATION AND  
REGISTRATION MARKING**

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Sec.

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SOURCE: Docket No. 2047, 29 FR 3223, Mar. 11, 1964, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 45 appear at 74 FR 53394, Oct. 16, 2009.

**Subpart A—General**

**§ 45.1 Applicability.**

This part prescribes the requirements for—

(a) Marking products and articles manufactured under—

(1) A type certificate;

(2) A production approval as defined under part 21 of this chapter; and

(3) The provisions of an agreement between the United States and another country or jurisdiction for the acceptance of products and articles; and

(b) Nationality and registration marking of aircraft registered in the United States in accordance with part 47.

[Doc. No. 2047, 29 FR 3223, Mar. 11, 1964, as amended by Amdt. 45-3, 32 FR 188, Jan. 10, 1967; Amdt. 45-26, 74 FR 53394, Oct. 16, 2009; Doc. No. FAA-2015-7396, Amdt. 45-30, 80 FR 78645, Dec. 16, 2015]