(d) Equipment HIRF Test Level 1.
(1) From 10 kilohertz (kHz) to 400 megahertz (MHz), use conducted susceptibility tests with continuous wave (CW) and 1 kHz square wave modulation with 90 percent depth or greater. The conducted susceptibility current must start at a minimum of 0.6 milliamperes (mA) at 10 kHz, increasing 20 decibel (dB) per frequency decade to a maximum of 3 mA at 40 MHz.
(2) From 500 kHz to 40 MHz, use conducted susceptibility tests at a minimum of 7.5 mA at 40 MHz, decreasing 20 dB per frequency decade to a minimum of 3 mA at 40 MHz.
(3) From 40 MHz to 400 MHz, use conducted susceptibility tests, starting at a minimum of 30 mA at 40 MHz, decreasing 20 dB per frequency decade to a minimum of 3 mA at 40 MHz.
(4) From 100 MHz to 400 MHz, use radiated susceptibility tests at a minimum of 20 volts per meter (V/m) peak with CW and 1 kHz square wave modulation with 90 percent depth or greater.
(5) From 400 MHz to 8 gigahertz (GHz), use radiated susceptibility tests at a minimum of 30 V/m peak with pulse modulation of 4 percent duty cycle and a 1 kHz pulse repetition frequency. This signal must be switched on and off at a rate of 1 Hz with a duty cycle of 50 percent.

(e) Equipment HIRF Test Level 2. Equipment HIRF test level 2 is HIRF environment II in Table II of this appendix reduced by acceptable aircraft transfer function and attenuation curves. Testing must cover the frequency band of 10 kHz to 8 GHz.

(f) Equipment HIRF Test Level 3.
(1) From 10 kHz to 40 MHz, use conducted susceptibility tests, starting at a minimum of 0.15 mA at 10 kHz, increasing 20 dB per frequency decade to a minimum of 7.5 mA at 40 kHz.
(2) From 500 kHz to 40 MHz, use conducted susceptibility tests at a minimum of 7.5 mA at 40 MHz, decreasing 20 dB per frequency decade to a minimum of 0.75 mA at 40 MHz.
PART 31—AIRWORTHINESS STANDARDS: MANNED FREE BALLOONS

Subpart A—General

§ 31.1 Applicability.
(a) This part prescribes airworthiness standards for the issue of type certificates and changes to those certificates, for manned free balloons.
(b) Each person who applies under Part 21 for such a certificate or change must show compliance with the applicable requirements of this part.
(c) For purposes of this part—
(1) A captive gas balloon is a balloon that derives its lift from a captive lighter-than-air gas;
(2) A hot air balloon is a balloon that derives its lift from heated air;
(3) The envelope is the enclosure in which the lifting means is contained;
(4) The basket is the container, suspended beneath the envelope, for the balloon occupants;
(5) The trapeze is a harness or is a seat consisting of a horizontal bar or platform suspended beneath the envelope for the balloon occupants; and
(6) The design maximum weight is the maximum total weight of the balloon, less the lifting gas or air.

Subpart B—Flight Requirements

§ 31.12 Proof of compliance.
(a) Each requirement of this subpart must be met at each weight within the range of loading conditions for which certification is requested. This must be shown by—
(1) Tests upon a balloon of the type for which certification is requested or by calculations based on, and equal in accuracy to, the results of testing; and
(2) Systematic investigation of each weight if compliance cannot be reasonably inferred from the weights investigated.