Federal Communications Commission

§ 15.32 Test procedures for CPU boards and computer power supplies.

Power supplies and CPU boards used with personal computers and for which separate authorizations are required to be obtained shall be tested as follows:

(a) CPU boards shall be tested as follows:

(i) Testing for radiated emissions shall be performed with the CPU board installed in a typical enclosure but with the enclosure’s cover removed so that the internal circuitry is exposed at the top and on at least two sides. Additional components, including a power supply, peripheral devices, and subassemblies, shall be added, as needed, to result in a complete personal computer system. If the oscillator and the microprocessor circuits are contained on separate circuit boards, both boards, typical of the combination that would normally be employed, must be used in the test. Testing shall be in accordance with the procedures specified in §15.31.

(ii) Under these test conditions, the system under test shall not exceed the radiated emission limits specified in §15.109 by more than 6 dB. Emissions greater than 6 dB that can be identified and documented to originate from a component(s) other than the CPU board being tested, may be dismissed.

(ii) Unless the test in paragraph (a)(1)(i) of this section demonstrates compliance with the limits in §15.109, a second test shall be performed using the same configuration described above.

(p) In those cases where the provisions in this section conflict with the measurement procedures in paragraph (a) of this section and the procedures were implemented after June 23, 1989, the provisions contained in the measurement procedures shall take precedence.

but with the cover installed on the enclosure. Testing shall be in accordance with the procedures specified in §15.31. Under these test conditions, the system under test shall not exceed the radiated emission limits specified in §15.109.

(2) In lieu of the procedure in (a)(1) of this section, CPU boards may be tested to demonstrate compliance with the limits in §15.109 using a specified enclosure with the cover installed. Testing for radiated emissions shall be performed with the CPU board installed in a typical system configuration. Additional components, including a power supply, peripheral devices, and subassemblies, shall be added, as needed, to result in a complete personal computer system. If the oscillator and the microprocessor circuits are contained on separate circuit boards, both boards, typical of the combination that would normally be employed, must be used in the test. Testing shall be in accordance with the procedures specified in §15.31. Under this procedure, CPU boards that comply with the limits in §15.109 must be marketed together with the specific enclosure used for the test.

(3) The test demonstrating compliance with the AC power line conducted limits specified in §15.107 shall be performed in accordance with the procedures specified in §15.31 using an enclosure, peripherals, power supply and subassemblies that are typical of the type with which the CPU board under test would normally be employed.

(b) The power supply shall be tested installed in an enclosure that is typical of the type within which it would normally be installed. Additional components, including peripheral devices, a CPU board, and subassemblies, shall be added, as needed, to result in a complete personal computer system. Testing shall be in accordance with the procedures specified in §15.31 and must demonstrate compliance with all of the standards contained in this part.

§ 15.33 Frequency range of radiated measurements.

(a) For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in this paragraph:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(4) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a)(1) through (a)(3) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this section, whichever is the higher frequency range of investigation.

(b) For unintentional radiators:

(1) Except as otherwise indicated in paragraphs (b)(2) or (b)(3) of this section, for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

<table>
<thead>
<tr>
<th>Highest frequency generated or used in the device or on which the device operates or tunes (MHz)</th>
<th>Upper frequency of measurement range (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 1.705</td>
<td>30.</td>
</tr>
<tr>
<td>1.705–108</td>
<td>1000.</td>
</tr>
<tr>
<td>500–1000</td>
<td>5000.</td>
</tr>
<tr>
<td>Above 1000</td>
<td>5th harmonic of the highest frequency or 40 GHz, whichever is lower.</td>
</tr>
</tbody>
</table>

(2) A unintentional radiator, excluding a digital device, in which the highest frequency generated in the device,