

A SIMPLIFIED GUIDE TO F.C.C. RULES & REGULATIONS

REGARDING

DIGITAL ELECTRONIC PRODUCTS

Only a few years ago the most sophisticated home electronic product was the television. With the space age here, small businesses and private individuals are able to own state of the art computerized electronic products. The basis for designing these powerful, small, and affordable electronic devices is the microprocessor. The microprocessor is a tiny component capable of performing many complex operations using "digital" techniques.

There is one significant commonality to designing circuits using digital electronics: high frequency signals are required. These signals can be transmitted from the circuit much in the same way that radio waves are transmitted. Therefore, the more computerized electronics we have, the more radio noise interference we produce. Uncontrolled radio noise can potentially disturb everything from emergency communications to television and radio reception, aircraft avionics and even telephone service!

To insure that all electronics can exist harmoniously, the Federal Communications Commission is requiring that all digital electronics be checked for radio emissions.

In this article, we intend to answer some of the more important questions regarding the new rules, thereby simplifying the procedures to secure compliance and certification approvals.

1. Who is the F.C.C. and why are they imposing new rules for digital electronic products?

The F.C.C. (Federal Communications Commission) is a United States government agency. Its overall responsibility is to control the airwaves. Since digital electronic products pose a threat to the free use of our airwaves, it is the responsibility of the F.C.C. to make sure nothing interferes with them.

2. Under what documents issued by the F.C.C. would I find the rules and regulations regarding the control of radio noise emissions from digital electronic products?

At this time F.C.C. Docket 20780 explains the requirements covering digital electronic products. Shortly a subpart will be added to Part 15 of the F.C.C. Rules and Regulations. Subpart J will be the final governing document.

3. Typically, what type of electronic equipment will require certification or compliance under these new rules?

All digital electronic products which use timing

and control signals or pulses at 10 kilohertz (10,000 cycles per second) or greater. Examples of such equipment are:

- All personal and business computers and associated peripherals
- Electronic toys and games
- Electronic typewriters and office equipment
- Digital cash registers and weighing scales

4. How can I determine if my product complies with the new F.C.C. rules and regulations?

Testing is normally required to determine if your product is in compliance. These tests measure both the radio interference generated by the device and interference being conducted through the line cord.

5. Why does the F.C.C. care if interference is conducted through a line cord?

Much the same way that "radiated" interference disturbs signals "conducted" interference can also disturb reception.

6. Can I perform my own F.C.C. interference tests? Yes, but these tests are very specialized and should be performed on an F.C.C. approved test site. In addition, a sizable investment in special test equipment is required. Generally most manufacturers use independent test laboratories to test their products.

7. What is the difference between "Certification" versus a "Verification" requirement from the F.C.C.? Certification requires submission of test data to the F.C.C. for their approval. When the F.C.C. approves your test data they will issue a certificate which permits you to sell your product. Verification on the other hand only requires the manufacturer to test the equipment to insure it is within the specified limits and retain the data on file as proof of compliance.

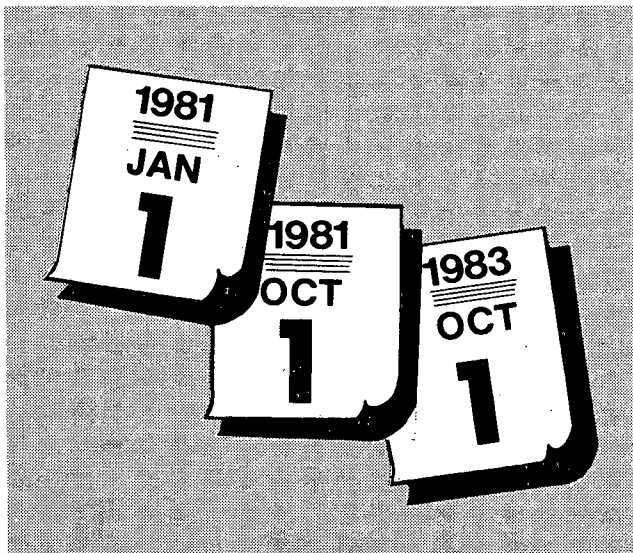
8. Does F.C.C. Part 15, Subpart J require certification or compliance?

The proposed requirement is primarily a compliance specification however, in some cases certification is required. If after looking at the new requirement you are unsure as to which applies to your product, your test laboratory or the F.C.C. can make the determination for you.

9. What happens if I do not test to F.C.C. Part 15, Subpart J?

This requirement is a Federal Law. Failure to comply can result in stiff penalties for the manufacturer or supplier. The F.C.C. can fine, imprison, and stop all sales and manufacture of equipment not shown to comply.

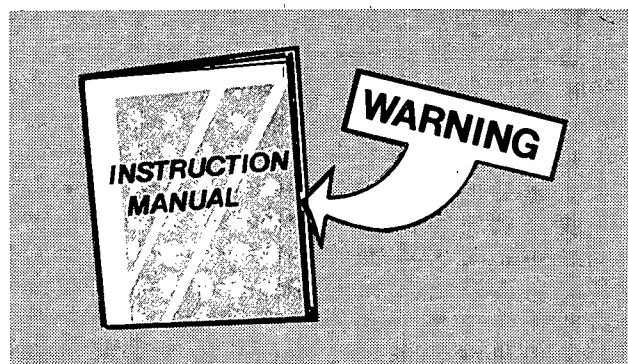
10. Who is normally responsible for having a product tested?
In most cases the manufacturer should arrange to have the product(s) tested, however in some cases import agents and brokers have accepted this responsibility.
11. If a change is made to the design or packaging, must I retest the product?
In most cases the answer is yes, as these changes may increase the potential of a radio interference hazard. The F.C.C. also suggests that products should be periodically retested to insure compliance, since parts substitutions and manufacturing changes can also have an adverse affect on radio emissions.



12. How much time do I have to perform and pass these tests?
All personal computers, peripherals, electronic games and electronic toys manufactured after January 1, 1981 shall be tested to get certification from the F.C.C. regardless of when they were designed or first manufactured.
Equipment presently being sold does not have to be tested until October 1, 1983. Any new designs to be released in 1981 and thereafter must prove compliance by October 1, 1981.

All equipment now in production must be labeled beginning **JANUARY 1, 1981** to state whether it has been tested and may interfere with radio and television reception!

13. I know the F.C.C. requires a label on products such as televisions, radios, etc. indicating their certification. Will these new requirements also include labeling?
Yes, beginning January 1, 1981, all digital electronic equipment must be labeled to indicate compliance or certification. Those products that are exempt from testing until after this date must be labeled to indicate that they are potential radio interference hazards until such time as they are proven to be within compliance.



14. Aside from labeling the actual equipment, must I also state anything in the instruction book regarding compliance or certification (whichever applies)?
Yes, a warning statement as written in Part 15, Subpart J (Docket 20780) must appear in the instruction book. The warning statement describes the compliance or certification status and interference potential.
15. If I have a product that has been sold for the past few years and after testing, proves itself to be a radio interference hazard, must I recal and correct all those units sold before the new requirement takes effect?
No, the F.C.C. does not require any retroactive compliance.
16. Are any digital electronic products exempt from Part 15, Subpart J (Docket 20780)?
For the time being test equipment for industrial commercial and medical equipment applications are exempt. Equipment in a transportation vehicle (includes motor vehicles and aircraft) and computing devices used in home appliances such as dishwashers, microwave ovens, etc. are also exempt. Test equipment is defined as equipment used to test other equipment (i.e., oscilloscopes, digital volt meters, signal generators, etc.) This ruling is only temporary, and it is expected to be lifted within 3 to 5 years.

Author's Note

This guide has been prepared using currently available information. Changes to this ruling may occur. Although we have attempted to provide the most up to date information, we cannot be responsible for changes the F.C.C. may implement which could affect the validity of some information provided herein. However, your test laboratory, local F.C.C. field office, or the F.C.C. in Washington D.C. can verify the information or provide the latest data.

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