



# 8 Tips for a Smooth FCC Certification

The most common mistakes to avoid

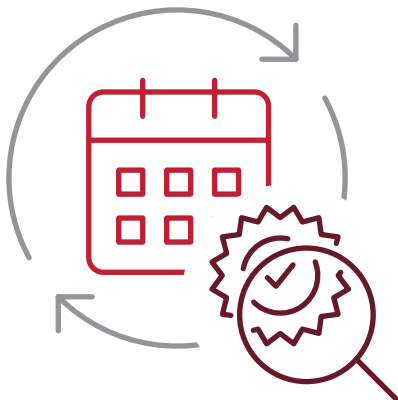


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The Federal Communications Commission (FCC) is an independent U.S. government agency overseen by Congress. It regulates interstate and international communications by radio, television, wire, satellite and cable for the United States. The FCC serves as the primary authority for communications law, regulation and technological innovation. The FCC's rules and regulations are in Title 47 of the Code of Federal Regulations (CFR).

Products covered by FCC regulations include consumer technology devices, lighting devices, appliances, industrial devices, and wireless devices with Bluetooth®, Wi-Fi, Zigbee® and/or cellular connectivity. In order for manufacturers of these products to export a product into the U.S., FCC certification must be achieved. To help with that effort, here is a list of the most common mistakes manufacturers can make when applying for FCC certification.

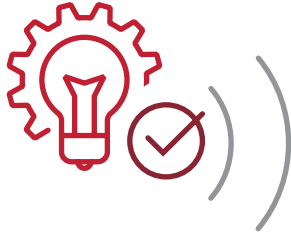
Source: <https://www.fcc.gov/>



## 1. Underestimating the time needed for certification

For all applicants — but especially new applicants — sufficient time needs to be allowed to complete the certification of the product prior to it being required on the market. On average, applicants should expect the certification process to be two weeks, provided the submitted exhibits are of the correct standard. A detailed description of the operation of the product provided at the time of certification helps to speed the process.



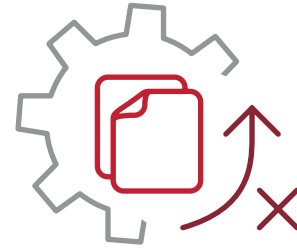


## 2. Not knowing your own product

It is important to know:

- How your products will be used, including mobile and portable scenarios:
  - Mobile – normal product operation is used greater than 20 centimeters from user
  - Portable – normal product operation is used less than 20 cm from user
- If your product has multiple radios that transmit simultaneously
- If your product is to be certified as a modular approval, ensure the correct modular approval is used and, if single modular approval will be used, ensure module is screened on all sides (this can include a PCB ground plane)
- If charging the product disable the radios or can the product transmit when charging
- If the product has frequency oscillators that operate below 30 MegaHertz
- How radio technology is incorporated in the product, such as what are its expected output powers and specified maximum output power

Any of the above that are not considered correctly will result in a delay in certification because additional testing could be required.



## 3. Wrong labeling

Following all prescribed FCC labelling requirements is important. For example, many manufacturers mistakenly believe Part 15B unintentional unlicensed radiator text can just appear in the product user manual or installation guide:

*“(a) In addition to the requirements in part 2 of this chapter, a device subject to certification, or Supplier’s Declaration of Conformity shall be labelled as follows:*

*(3) All other devices shall bear the following statement in a conspicuous location on the device:*

*This device complies with part 15 of the FCC Rules.*

*Operation is subject to the following two conditions:*

- (1) This device may not cause harmful interference, and*
- (2) this device must accept any interference received, including interference that may cause undesired operation.”*

However, if the product is big enough, it is mandatory for this text to be placed on the product itself.

Therefore, consider this text at the start of product development rather than highlighting it as part of the design changes required for certification just prior to launch.





## 4. Not following the guidance in the customer supplied items for FCC applications

In the customer supplied items document, applicants need to read a lot of information prior to generating the exhibits for the application. The manufacturer needs also to ensure all exhibit documents are less than 6 MB in size and that the information held by the FCC for the Grantee Code and the FCC Registration Number (FRN) are up to date and match the information on the FCC 731 form.



## 5. Incorrect or insufficient testing

The applicant must give all necessary information to the test laboratory to ensure the product is tested correctly the first time or the certification body will find the discrepancy, delaying certification while additional testing is carried out.

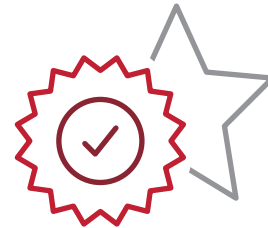
Use correct operating frequency bands and operational bandwidths. Typical information not defined correctly includes:

- Correct operating frequency bands and operational bandwidths
- Maximum specified output power
- Does the product transmit while charging?
- Specified antenna
- Are any clock frequencies below 30 MHz?



## 6. Poor test samples

When a manufacturer fails to ensure that test samples are prepared correctly, testing may have to be completely performed again due to incorrect test results. The manufacturer must ensure the samples are checked before they are sent to the test laboratory so they function in the required test modes. For example, they must check maximum specified transmitter power. Also, to ensure test samples are operated correctly, manufacturers must provide adequate test instructions to the test laboratory.



## 7. The product's wow factor

Manufacturers hope to design a new product that takes the market by storm. However, if the certification body has to ask the FCC if the product has been tested correctly when the product reaches certification, the process can be halted.

A fundamentally new design of a product or a product feature needs to be checked with the FCC using Pre-Approval Guidance (PAG). By doing this in advance of the testing, the correct testing is done and certification may not be delayed.

PAG could be required for:

- A new technology that the FCC has not seen before
- Not meeting all the rules published in the FCC Knowledge Database (KDB)
- Irregular form factor that has to be Specific Absorption Rate (SAR) tested in a particular way



## 8. Ignore the Three Cs for exhibits: Clearness, Correctness and Confidentiality

**Clear and correct exhibits:** Ensure all information within the exhibits is clear, concise and correct, otherwise an exhibit will be returned for updating. This means that an applicant needs to read through all the exhibits and the application prior to making the submission to ensure the exhibits are clearly written, have been written in a concise manner, and the information is correct in each exhibit and throughout the application. Once the FCC certification has been issued, a number of the exhibits will be in the public domain.

**Product confidentiality:** When FCC certification is granted for a product, some exhibits become public domain. This can lead to confidentiality issues the manufacturer needs to consider. The risk is high that some information the manufacturer wants to keep out of the public domain will be made available. Once again, being clear but concise can help maintain confidentiality about product features considered key.







## Summary and conclusion

Certainly, speed to market is critically important: beating the competition to the shelves can be the difference between product success and failure. However, having a product that is safe, delivers on its promised functionality and is in compliance with the FCC's legal requirements is equally important.

Navigating the complex certification process with help from a trusted third party to help ensure your product conforms to standards and works as promised goes a long way to boosting consumer confidence. Working with a laboratory with deep industry expertise and extensive technical knowledge can help you avoid common mistakes that can delay your certification.

UL is an accredited laboratory for FCC testing and a Telecommunication Certification Body (TCB) with more than 30 years of experience in radio and wireless approvals for the North American market.

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