



Modem Globalization Guide

Is modem connectivity a critical component to your product solution? Does it enhance your product by providing communication capabilities? Do you intend to sell your solution in any of these markets*?

Argentina	Germany	Liechtenstein	Singapore
Australia	Greece	Lithuania	Slovak Republic
Austria	Hong Kong	Luxembourg	Slovenia
Belgium	Hungary	Malaysia	South Africa
Brazil	Iceland	Malta	Spain
Canada	India	Mexico	Sweden
Chile	Indonesia	Netherlands	Switzerland
China	Ireland	New Zealand	Taiwan
Cyprus	Israel	Norway	Thailand
Czech Republic	Italy	Philippines	Turkey
Denmark	Japan	Poland	United Kingdom
Finland	Korea	Portugal	United States
France	Latvia	Russia	

If you answered yes to any of these questions, this guide is a must read! It will provide a general overview of the telecom compliance certification process (otherwise known as homologation) and how you can eliminate this procedure with a Multi-Tech globally approved modem.

* Multi-Tech supports more than 240 countries with our global modem solutions.

Globally Approved vs. Globally Approvable

As you research the market for a modem solution that meets your global requirements, it is important that you understand the difference between a “globally approved” modem versus a “globally approvable” modem. Advancements in technology, combined with Multi-Tech’s years of experience in the certification process, have led to the world’s first full line of “globally approved” modems. A “globally approved” modem means one modem is certified for use in many countries around the world. The innovative design allows for the variations in country requirements to be accommodated in the modem hardware/firmware.

A “globally approvable” modem, on the other hand, is capable of being approved for use in other countries, however you are responsible for obtaining the required telecom approvals yourself. Not only does this mean taking on the certification process for each targeted country, it also means additional work may be necessary in the modem firmware to accommodate the various country requirements. To gain a better understanding of what this all entails, let’s explore telecom compliance requirements and the approval process.

Today’s Telecom Compliance Requirements

In today’s competitive environment, manufacturers cannot risk being late to market because of telecom certification bottlenecks. Telecommunications compliance, specifically, can be quite a daunting process when you take a look at telecom regulations for each targeted country.

Since the early 70’s, most countries have had specific telecom regulations requiring anyone marketing a modem, fax machine or phone system to obtain the proper telecom approvals pertaining to that country. Often, unique modem hardware was required to meet the various country requirements.

In 1992, the European union was formed which was comprised of 15 countries. Their goal of standardizing telecom requirements for analog modems was reached in 1997 with the advent of the CTR-21 specifications. A few countries, such as France, retained some additional, voluntary, national requirements. In the U.S., certification to FCC Part 68 requirements is mandatory and must be certified by a recognized telecommunications certification body (TCB). In addition, every six months, the modem must be tested for continued compliance. Most other countries around the world also have independent telecom regulatory requirements.

In summary, telecom compliance in all countries is a continuously evolving process. Keeping up with this process and ascertaining the specific regulations for each country is a difficult task.

The Telecom Certification Process Defined

To better explain the telecom certification process, we’ve broken it down into basic steps that outline complex components. Keep in mind that each step consumes resources, time and dollars.

1. **Identify and Interpret Regulations.** For each targeted market, you need to start by identifying and interpreting the telecommunications regulations and standards dictated by each country. In some countries, telecom regulations also encompass EMC (Electromagnetic Compatibility) and safety regulations as well. Identifying and interpreting regulations, however, is easier “said” than “done”.

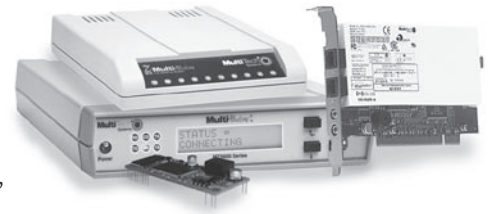
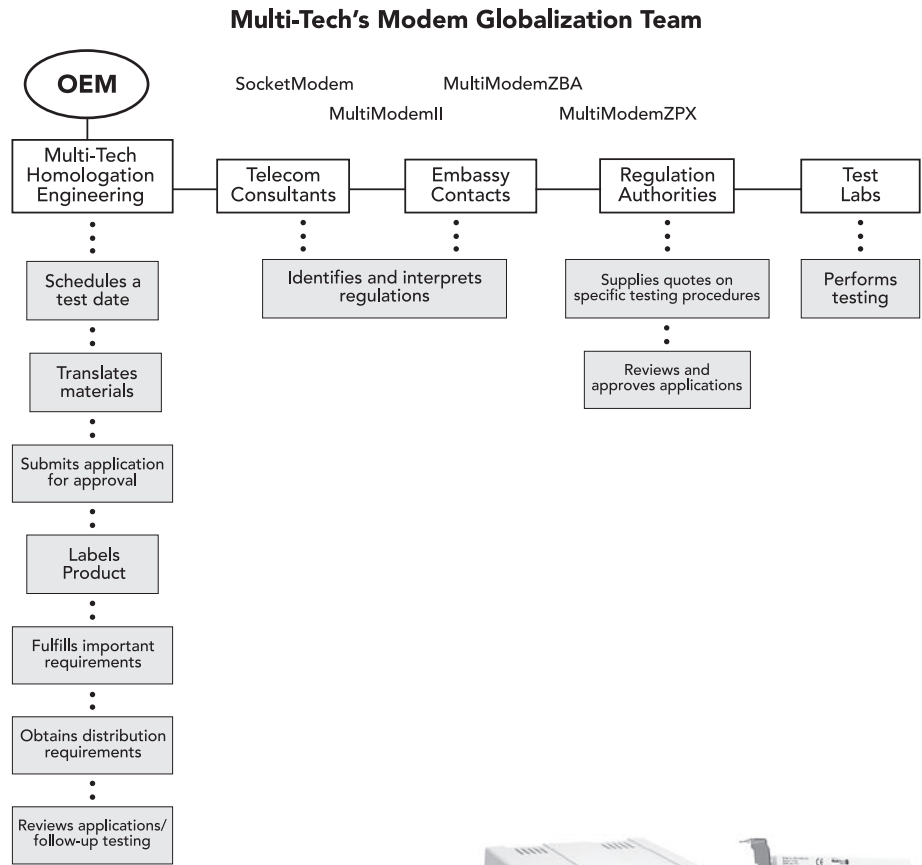
In fact, most manufacturers' hire international telecom design consultants to help explain and translate these regulations for you. If, however, you choose to attempt this on your own you can start by contacting Embassies in each country for referrals to approval authorities, test labs and the ministries of telecommunication.

2. **Get a Quote from the Approval Authority.** Once you thoroughly understand the compliance requirements, now it is time to get a quote to find out the costs of the specific testing procedures. This requires that you engage with the test lab and fill out application forms defining your product's capabilities.
3. **Build a prototype unit that meets regulatory specifications.**
4. **Schedule a Test Date.** Again, it sounds easy, but dealing with an "in-country" test lab can be difficult. Most manufacturers use their consultant, or local representative, to facilitate this process. In addition, you also need to understand what type of import permits and customs documentation are required for shipping the product to the test site.
5. **Perform Testing.** Depending on the complexity of your product, you may need to send an onsite engineer to help with the lab testing. The test process can take anywhere from 1 to 3 weeks. Add another 1 to 3 weeks for each problem encountered, depending on complexity that is encountered during the test. If after testing, your product does not meet all of the required standards, you may need to redesign the product and start the process again.
6. **Wait for Test Reports.** Once testing is complete, you will wait another 1 to 2 weeks for your test reports. Some countries can be as long as six weeks.
7. **Translate Manuals and other Written Material.** Depending on the country requirements, you may also need to translate your manuals in the country specific language. This can take another 2 to 3 weeks for completion.
8. **Submit for Approval.** The last step is to take your test reports and supporting documentation and submit it to the approval authority. This requires you to fill out yet another application and pay significant fees. The approval authority will then review the documentation and choose to approve it or not. The timeframe on this process varies by country. It can be anywhere from a week to several months.
9. **Repeat Process for the Next Country.** Unless you are only shipping to European countries, this entire process must be repeated for each country you are targeting.
10. **Label Product.** After you have received telecom approvals, you still aren't quite ready to ship into the targeted country. The last step is to determine the primary and secondary product labeling requirements, then create or acquire the proper labels. In addition, you will need to determine the importation requirements and obtain a distribution license.
11. **Certification Renewals.** Some countries require that you renew your approved certification on a regular basis. In some cases this simply requires resubmitting your application. For others, you are required to perform follow-up testing to show continued compliance.

The Multi-Tech Telecom Certification Team

Multi-Tech understands your need to get your product to market quickly. The telecom certification process as described above takes a considerable amount of time, money and resources. That's why utilizing a Multi-Tech "globally approved" modem solution (embedded, internal or external) can provide a significant competitive advantage to your product design because we handle the telecom compliance testing and approvals for you.

To illustrate, the flow chart will help identify the Multi-Tech team behind the certification process. This experienced team includes our own homologation engineers, as well as our valuable relationships with telecom consultants, government contacts, in-country regulation authorities and telecom test labs.



Multi-Tech Global Modem Solutions

When designing a product with an integral telecom component, let Multi-Tech's years of experience and superior global modem technology relieve the expense and burden of the certification process. Upon request, Multi-Tech will provide all of our compliance reports to support any approval efforts. In short, our global modem solutions will enhance your product and leave you with time, money and other resources to focus on developing your product's core features and get them to market quickly.

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