

The logo for PTCRB, consisting of the letters 'PTCRB' in a bold, blue, sans-serif font. The letters are slightly shadowed to give a 3D effect. Below the letters is a thick, horizontal orange bar. The logo is centered in the upper half of the page.

PTCRB

*Your “on-ramp” to fast, reliable,
carrier-grade operation and
inter-operability on GSM, UMTS
and LTE carriers in North
America and around the world.*



What is PTCRB?

Cellular products work reliably due to the extensive standards, specifications and testing undertaken by the industry. PTCRB was created by cellular network operators to consolidate and minimize testing requirements for all types of cellular devices. PTCRB testing and certification confirms that cellular products operate within defined global and industry specifications and meet the minimum level of network performance required by PTCRB operator member networks. PTCRB issues International Mobile Equipment Identifiers (IMEIs) to cellular equipment manufacturers for their cellular products and is one of the largest cellular certification organizations in the world. PTCRB certification is a requirement for all cellular devices operating in the GERAN (GSM), UTRA (UMTS) and E-UTRA (LTE) bands of the PTCRB operator members, including AT&T, T-Mobile, Rogers, Bell Canada, and TELUS.

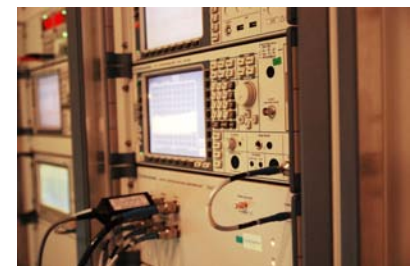
Who Performs the Testing?

PTCRB utilizes a third party testing system. Qualified independent laboratories are authorized by PTCRB to conduct testing on PTCRB's behalf. The PTCRB testing labs are among the premier cellular industry testing labs and are located literally around the world. To qualify as a PTCRB-accredited lab, they must meet a specific set of requirements which demonstrate that the lab has the state-of-the-art tools and knowledge to test devices to PTCRB specified test requirements. PTCRB-accredited labs are expected to be independent from any direct connection to a manufacturer (accomplished through ISO 17025 accreditation) and are required to be knowledgeable contributors to the PTCRB process and requirements.

There are currently 37 primary PTCRB accredited laboratories located around the world. In addition, there are 20 PTCRB associate laboratories to support the fully accredited primary laboratories. A list of these labs may be found on the PTCRB website.

The Role of CTIA—The Wireless Association[®]

CTIA -The Wireless Association has been assigned as the administrator for the PTCRB certification process. CTIA has also assumed responsibility for administration of the PTCRB issued IMEIs



Benefits of Participation

Manufacturers

Why do Smartphone, notebook M2M and IoT manufacturers obtain PTCRB certification?

1. To ensure their cellular products will activate and work on the network reliably.
2. To consolidate testing and costs.
3. To achieve higher customer satisfaction and lower support costs by validating there are no major performance-affecting problems before deploying devices to customers.
4. To get on the network (!): all Full Operator members, whether active or passive, require all devices to be PTCRB certified.
5. PTCRB operators may block devices which have not received PTCRB certification. Therefore, devices which are not certified may not be able to obtain service when roaming onto a PTCRB operator's network.

Operators

Why should operators join the PTCRB?

PTCRB was created by operators to establish a third-party certification process. PTCRB was intended to provide confidence to the operator that the certified device meets a minimum set of requirements established by the members. Operators join PTCRB to lower testing costs and gain confidence that a device will not cause harm to their networks.

Small operators, who may not have the resources to conduct testing in a lab of their own, join PTCRB to consolidate and leverage existing PTCRB testing, as well as to gain a voice in the industry to have features / functions introduced into the industry.

Modules and Integrations

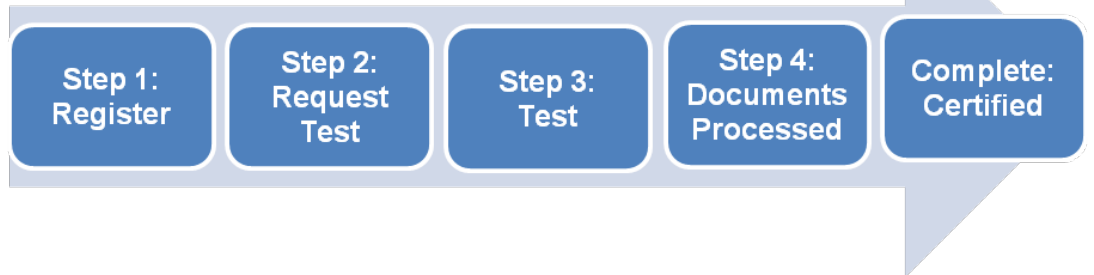
“**Modules**” are fully tested and certified, similar to a mobile phone. They follow the PTCRB certification process and receive their own designated PTCRB certification. Modules are not cellular devices or end products that can be run on an Operator Network by themselves. Rather they are simply an integrated circuit with no antenna, power, control or Subscriber Identity Module (SIM). However, they have undergone the majority of the PTCRB certification testing required to validate radio and protocol conformance. Modules hold a special certification designation within PTCRB.

To speed time-to-market and to save on development and testing costs, cellular device manufacturers and integrators can build their product using a PTCRB-certified module. Devices that incorporate PTCRB-certified modules are called “**Integrations**”. Integrations have the benefit of already having had the vast majority of test cases completed when the module was certified. The only testing required is typically limited to interfaces such as the SIM, power, and antenna. Manufacturers who integrate a PTCRB-certified module in their device follow the same step-by-step process as other devices with the exception that the integrator shall indicate which certified module they are using when entering their product into the PTCRB database.

PTCRB Notebook-M2M Working Group (PNWG)

A further benefit of PTCRB participation for Notebook and M2M manufacturers is the opportunity to participate in the PTCRB Notebook-M2M Working Group (PNWG). The PNWG is a forum open to PTCRB members to address test and certification aspects unique to M2M and Notebook devices. For example, this group has developed changes to the PTCRB process which have improved testing efficiency, reduced costs, and enabled specialized test methodologies. Because of the input manufacturers can provide to this group, PTCRB is the leading certification body for certifying GSM, UMTS and LTE M2M devices.

Steps to PTCRB Certification



STEP 1: PTCRB Registration and Database Access

A. OBTAIN A USER ID AND LOGIN

If you are not yet registered with PTCRB, obtain a user account by visiting the PTCRB website at www.ptcrb.com and selecting “New User Registration” from the “Registered User Login” window. Note: there are no charges or fees associated with registering with PTCRB.

B. REQUEST DATABASE ACCESS

After obtaining a username and password, send an email to the CTIA Certification Department certification@ctia.org requesting access to the certification database for purposes of certification. Product manufacturers submitting certification requests are granted access to the database.

STEP 2: Create a PTCRB Test Request

Log into the database through www.ptcrb.com and select the type of certification you need (i.e. initial certification, variant of certification, or an update to an existing certification, otherwise known as an ECO). During this process you will be required to

- Specify the type of device, the model name, the hardware and software version you will be certifying;
- Specify the radio module you are using, including technologies, bands, hardware and software version;
- Specify the features you are supporting;
- Indicate if you will require your own IMEI;
- Identify your points of contact; and
- Identify the primary lab you plan to use for PTCRB certification testing.

The primary lab will be responsible for all testing performed on the device. Once your request has been submitted, the lab will be notified and you will receive a PTCRB certification number which will be your permanent record and reference of your certification request.

STEP 3: Test

The testing required will be determined by the primary lab based on the device's capabilities. Testing need not be long or extensive. For example, M2M Integrations using an existing PTCRB certified module will not require any Over the Air (OTA) or additional testing if the following criteria are met:

- Device does not support voice
- Device is not body worn
- Device currently has FCC certification
- Device is using an approved antenna type as per the FCC module grant
- If these simple criteria are met, then testing is limited to SIM Electrical and Radiated Spurious Emissions.

Upon completion of the testing, the lab will submit the required documentation to the certification database. The manufacturer is also required to provide certain documentation— such as declarations of adherence to FCC grants, antenna information, and user manual. The manufacturer will also be required to make payment for the certification fee.

STEP 4: Documents Processed: Complete Certification

CTIA will ensure all requirements have been met and then issue a certification notice to you, the manufacturer:

“Congratulations!!! Your product is now PTCRB certified and is now recognized as PTCRB certified for all PTCRB operator’s networks as well for roaming and operation on networks around the world. Your certified product will be listed on the PTCRB certified product website: [www. PTCRB.com](http://www.PTCRB.com)”

Questions and Answers:

QUESTION: How do I make updates or changes to the product?

ANSWER: To make updates or changes to the product, or to release a new product, jump directly to Step 2 of PTCRB Certification.

QUESTION: Do I need to pay membership or annual fees to retain my product's certification?

ANSWER: No, the PTCRB CTIA Certification Fee is a onetime, per certification charge. Registration with PTCRB is free and there are no annual fees or membership fee requirements for manufacturers.

Types of Devices and Products the PTCRB Certifies

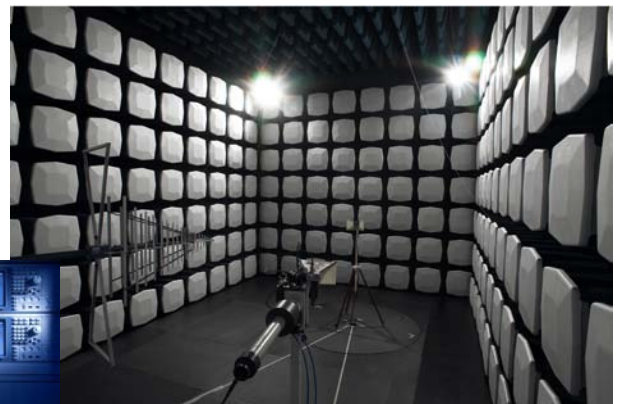
- Handsets / Smart phones
- PDA's
- Laptops
- PCMCIA Cards
- Ground Traffic Control
- Vehicle Tracking Devices
- Alarm Transmission Devices
- GPS Modems
- Pet Tracking Devices
- Handheld Personal Computers

- Package Tracking Devices
- Wireless Routers
- Wireless Payment Systems
- Automobile Navigation Systems
- Irrigations Systems
- Survey Equipment
- Vending Machines
- Parking Meters
- Meter Readers
- Body Wearables

Growth of the PTCRB

The number of devices being certified by the PTCRB continues to grow steadily from year to year with now over 10,000 registered PTCRB certified products and modules representing the cellular manufacturers from around the world.

For more information about the PTCRB, visit www.ptcrb.com.



Membership Types

Manufacturers, Laboratories, and Observers

With the exception of operators, there is no formal membership. Interested companies can simply go to the PTCRB website, www.ptcrb.com, and request access to the website.



Operators

Operators will need to follow the same steps as indicated above. However a new operator will be required to complete an operator membership form, which can be obtained by contacting the PTCRB Chair and Vice-Chair. This form is intended to collect information about the operator to establish their membership level.



Certification Database Access

After obtaining a username and password on the PTCRB Website, please send an email to the CTIA Certification Department at certification@ctia.org if you will need access to the database for product Certification.

If you have further questions regarding PTCRB certification or the PTCRB Certification process, please contract us at info@ptcrb.com





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www.ptcrb.com