
 **TÜVRheinland®**  
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### Intro to Wireless Certification for the FCC and Industry Canada




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## Topics

- Obtaining An FCC Grantee Code and an Industry Canada Company Number
- FCC and Industry Canada Standards, and where to find them
- Modular Approvals and Limited Modular Approval
- MPE or SAR?
- FCC Knowledge Database (KDB)
- TCB/FCB -- Who are they? What can they do for you?





## (FRN) FCC Registration Number

- All entities doing business with the FCC must obtain an FCC Registration Number (FRN). To register for an FRN; change previously submitted FRN information; or search for an FRN, visit:  
<https://fjallfoss.fcc.gov/cores/CoresHome.html> .
- A Tax Identification Number (TIN), Employee Identification Number (EIN), or Social Security Number (SSN) is required for all entities within the USA . All entities outside of the USA will be assigned a TIN at the time an FRN is assigned.




## FCC Registration Site





## FCC Grantee Code

- To obtain a grantee code...  
<https://apps.fcc.gov/eas/RegisterGrantee.do>.
- Any representative of the applicant may obtain the grantee code and/or pay the fee for the assigned code; the representative may be an individual, test firm, TCB, etc. Regardless who obtains the new code, the applicant should retain, the new Grantee Code; the Grantee Code Registration Number (GC#); and the date that both were assigned.
- A grantee code issued on or after May 1, 2013 will have five characters, consisting of Arabic numerals, capital letters, or a combination thereof



## Grantee Registration



## Grantee Signatory

- The person listed as the Contact Information will be required to act on behalf of the Company in any transactions with the FCC.
- The contact person will be required to sign all authorization letters and forms for Certifying their transmitter.



## FCC ID

- The **FCC ID** consists of two elements, a grantee code and an equipment product code. The FCC ID is assigned for Equipment Authorization under various Title 47 rules including but not limited to Parts 15, 90, and 101.
- The **Grantee code** is a three or five character alphanumeric string representing the Grantee/Applicant. The Grantee Code does not contain the numbers one and/or zero. The Grantee Code is assigned by the Commission permanently to a company for authorization of all radio frequency equipment.
- The **Product Code** is the non-grantee code portion of the FCC ID that begins after the grantee code. The Product Code may include hyphens and/or dashes (-).



## FCC ID Search

<https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm>

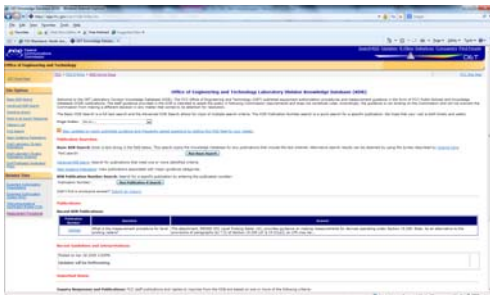


## FCC Standards

- FCC Title 47 – Telecommunications Part 15 Subpart C Intentional Radiators  
• <http://www.gpo.gov/fdsys/pkg/CFR-2008-title47-vol1/content-detail.html>
- IEEE C63.10:2013 – American National Standard of procedures for Compliance Testing of Unlicensed Wireless Devices.
- To Purchase ANSI Standards...  
• <https://global.ih.com/standards.cfm?publisher=ANSI&RID=Z56&MID=5280&gclid=CP3M-rPMmMECFsXwwod6rcASg>



## FCC Knowledge Data Base

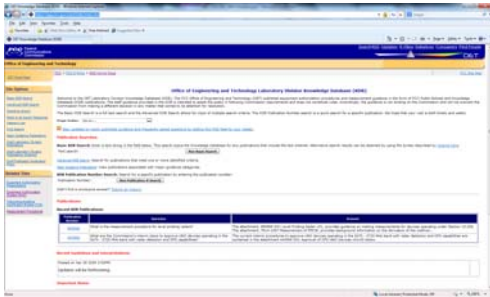


## KDB Questions

- <https://apps.fcc.gov/oetcf/kdb/index.cfm>
- Great resource for a multitude of FAQ's
- These random questions will provide you with direct answers from the FCC or guide you to FCC publications in which they have consolidated questions into a public notice
- Public Notices are essentially additions, or clarifications to existing rules and offer up specific guidance



## FCC KDB



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## Industry Canada Certification and Engineering Bureau



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## Industry Canada

- Spectrum Management and Telecommunications - Standards
- [http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h\\_sf06129.html](http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf06129.html)
- Typical Standards for Unlicensed Transmitters...
- [RSS-210 — Licence-exempt Radio Apparatus \(All Frequency Bands\): Category I Equipment](#)
- [RSS-Gen — General Requirements and Information for the Certification of Radio Apparatus](#)
- [RSS-102 — Radio Frequency \(RF\) Exposure Compliance of Radiocommunication Apparatus \(All Frequency Bands\)](#)

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## Industry Canada Standards

- You will find that the Industry Canada Standards are quite similar to the FCC's standards
- The standards are Itemized by type of equipment or transmitter and are free to download.

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## IC Company Number

- Obtaining an Industry Canada Company Number (CN) Through E-Filing System
  - [http://www.ic.gc.ca/eic/site/ceb-bhst.nsf/eng/h\\_t00051.html](http://www.ic.gc.ca/eic/site/ceb-bhst.nsf/eng/h_t00051.html)
- The above link directs you to FAQ's for Industry Canada's Certification and Engineering Bureau
- Once given a (CN) you will choose the (UPN) Unique Product Number, just like you do with the FCC ID Number

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## Canadian Representative

- Any company outside of Canada will need a Canadian Representative.
- The applicant must provide in writing the identity of a representative in Canada who is capable of responding to enquiries and who can provide post-certification audit samples at no charge to Industry Canada.

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## Family Certification

- Family certification may be granted too many models of radio equipment, which are nearly electrically identical in design and construction provided that each model is assigned a unique model number by the manufacturer. Additional information can be found in [RSP-100](#).



## Modifying Equipment after Certification

- A reassessment is required when a Class II permissive change is made to previously certified equipment as per [RSP-100](#).
- **What is a class II permissive change (Reassessment)?**
- A class II permissive change requires notification to Industry Canada. A class II permissive change includes those modifications in the radio equipment, which **do** change the electrical characteristics beyond the rated limits established by the manufacturer and accepted by Industry Canada for its certification, **without** violating the requirements of the applicable standard. This type of change requires notification to Industry Canada. The type of service is called reassessment.



## FCC Permissive Change

- 178919 D01 Permissive Change Policy v05r04
- This Document Can be found in the FCC KDB
- Outlines the different types or Class of permissive and what testing and documentation is required to apply for a permissive change.
- Antenna Changes
- Printed Circuit Board (PCB) and hardware changes
- Enclosure changes
- Software changes
- Miscellaneous changes



## MPE – Maximum Permissible Exposure

- 447498 D01 General RF Exposure Guidance v05r02
- The above document, which can be found in the FCC KDB provides the RF Exposure Procedures for Mobile and Portable Devices
- Mobile Devices – Have a minimum test separation of  $\geq 20$  cm is required between the antenna and any nearby person
- Portable Devices – A SAR evaluation is performed on these devices that have a separation distance of  $\leq 20$ cm
- Test labs can perform this calculation to determine the compliance of your device and/or whether SAR testing is required.



## USB Dongles

- D02 SAR Procedures for Dongle Xmtr v02
- A SAR evaluation is performed on all simple Dongles.
- USB Dongle transmitters must show compliance at a test separation distance of 5mm



## Modular Approvals

- 996369 D01 Module Equip Auth Guide v01r04
- A transmitter with a Modular or limited Modular Grant can be installed in different end-use products by the grantee or other equipment manufacturers; and the host may not require additional testing or equipment authorization.
- This is extremely cost effective and convenient for manufacturers implementing wireless into their products



## Types of Modular Approvals

- **Single-Modular Transmitter** – a complete RF transmission sub-assembly designed to be incorporated into another device, that must demonstrate compliance with the FCC rules
- **Limited single-modular transmitter** – a single-modular transmitter that complies with Section 15.212(a)(1) Modular rules. Only when constrained to specific host(s) and/or associated grant conditions.
- **Split-modular transmitter** – A RF transmission system that complies with the requirements for a single-modular transmitter, that is separated into a front-end section and a control element section
- **Limited split-modular transmitter** – A split-modular transmitter that complies with the definition and technical rules for split-modules only when constrained to specific operating host(s)



## Chip Sets

- Using a chip set instead of a modular approved transmitter inside your device often times leads to You, having to test and get certification.
- Weigh out the cost and benefits of using a Chip Set vs a modular approved transmitter
- To test and certify a chip set, you WILL need the operating software to control the output power, channel selection, data rates, modulation etc...
- Some companies will allow you to make a Class II permissive change to their Modular approved transmitter  
i.e. adding a new type of antenna



This mini card module for handhelds and other products covers the 2.4, 5, and 60 GHz Wi-Fi bands and includes 2x multiple-input multiple output (MIMO) on the two lower bands for 802.11n compliance. The 60 GHz capability complies with the new FCC 17d standard Bluetooth. A/D also is included.



## TCB/FCB

Telecommunications Certified Body / Foreign Certified Body

- 641163 D01 TCB Program Roles and Resp v02
- On December 17, 1998, the Federal Communications Commission (FCC) adopted rules for the establishment of Telecommunication Certification Bodies (TCB). A TCB is a private third party organization, which is authorized to issue grants, within its scope of designation, for equipment subject to the FCC's certification procedure. Under these rules, a TCB has the authority to review and grant an application for certification to the FCC rules. The rules also established procedures for foreign TCBs under the terms of a government-to-government Mutual Recognition Agreement/Arrangement (MRA).

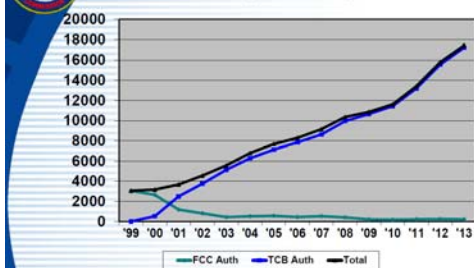


## TCB/FCB

- The TCB, reviews your report and supporting documentation, schematics, block diagrams, attestations, cover letters, manual etc... to ensure the testing was performed correctly and to the correct standards.
- The TCB uploads all the documentation to FCC and/or Industry Canada and can issue you a grant from the FCC and will provide you with a TAC (Technical Acceptance Certificate) for Industry Canada.
- With your TAC in hand, you must first check the REL listing on the Industry Canada web site to see if your product has been listed.
- A TCB can help you with asking the FCC questions for things that may not necessarily fit into the present Rules, through the FCC KDB site.



Equipment Authorization Certification Trends (1999 – 2013)



April 9, 2014

TCB Workshop

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## TCB Council

<http://www.tbccouncil.org/default.asp>



## Info

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## Questions



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