WL18MOD Product Certification

Introduction

The TI WL1835MODGB Module is now certified for FCC, IC, CE and TELEC. TI Customers that build products based on the TI WL1835MODGB module can save, in testing cost, and time per product family.

- This feature can realize customers savings of over \$60K per model family along with avoidance of test cycling and support resources.
- For more details please refer to the information below.

Certifications & Compliance



- Certified for United States
- Tests reports recognized by other countries for filing
- Industry Canada
- Certified for Canada
- Accepts FCC test reports for filing certifications



- CE Radio Approval
 - ETSI testing is recognized by 40+ countries for filing



- Certified for Japan
- TELEC Test reports are available

FCC ^[1] Certification

Module

The TI WL1835MODGB module is now certified for FCC as a single-modular transmitter.

- The TI WL1835MODGB is a FCC certified radio module that carries a "Modular" grant.
- Certified radio modules complies to the *"Intentional Radiator"* portion (Part 15c) for FCC certification: *Part 15.247 Transmitter tests*.

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- Part 15.247 transmitter tests consists of
 - AC Power Conducted Emissions
 - Radiated Emissions
 - Band Edge Measurements
 - 6dB bandwidth
 - Conducted Power
 - Power Spectral Density
 - Meeting Antenna Requirements
- The customer can refer to TI's [FCC certification], once available
- "Modular" certified radio modules are allowed for integration into multiple host end products by the FCC

Useful Links:

WL1835MODGB FCC modular grant

App note on modular FCC certification^[2]

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LS Reserach App Note for FCC Permessive Change (LSR is TI's recommended Partner for any services related to Regulatory Certification or Permessive changes)^[3]

Host End Products

- An end product, incorporating WL1835MODGB module, does not require additional testing or authorization for the WiFi transmitter as long as
 - An antenna of the same or similar type and equal or less gain to the antenna used in the WL1835MODGB COM8 Board (WL1835MODCOM8B^[4]) is used on the product
 - Any restrictions found in the grants are followed in the OEM's end product integrating the TI module.
- · Host end products can use the FCC ID of the certified module as the FCC ID of the host end product
- A label displaying the module's FCC ID must be affixed and visible on the host end product for approval
- · FCC IDs are required for host end products with radio transmitters

Customer's Responsibilities

- The manufacturer of the host end products are still responsible for any additional testing covered by the Class of the product. Device Class A and B.
- Customers still need to take their products through other FCC/IC testing such as unintentional radiators (FCC sub part 15B) including any other required regionally driven end product certifications including but not limited to EU directives.

FCC Part 15 Cert. Process/Flow

Step 1	Step 2	Step 3	Step 4	
Sub Part A	Sub Part B	Sub Part C	Device Class A and B	
General Provisions & Definitions	 Unintentional Radiators Devices, whose purpose is not to produce radio waves, but which do anyway, such as computers. 	 Intentional Radiators Devices designed to produce coherent radio waves, such as small transmitters Customers can reuse TI's Certifications 	Additional testing for intended use	

Additional testing maybe required for Host end product type.

- Class A: Digital Device for use in a commercial, industrial or business environment.
- Class B: Digital Device for use in a residential environment not withstanding use in commercial, business and industrial environments.
- The FCC allows for self-declaration for Part B so the process should be relatively painless

The customer can refer to the Electronic Code of Federal Regulation for Telecommunications, Part 15: Radio Frequencies Devices ^[5] for more details on each sub part.

Frequently Asked Questions

1. Can the customer change the Antenna Gain?

Answer: Customers that copy the TI Reference Layout and modify it to use a lower gain antenna, can generally leverage TI FCC ID through a Permissive Class 1 change.

2. Can the customer change the Layout or use different type of Antenna?

Answer: Customers that modify the antenna or layout in a way that changes the power (higher gain, shorter traces) are not able to leverage TI FCC ID through a Permissive Class 1 change. Such changes generally require additional testing and certification approval through a regulatory lab.

3. How can I get additional information on what is and is not permitted?

Answers: Changes to a modular radio or product will result in either a Permissive Change or a new FCC filing and

ID number. The degree of change is the determining factor for both the process and the amount of supporting data required to illustrate compliance. LS Research is TI recommended partner and takes pride in helping customers evaluate and develop the most beneficial test plan to properly address these changes.

IC ^[6] Certification

The TI WL1835MODGB module is now certified for Industry Canada (IC) as a single-modular transmitter

- For Industry Canada, the TI WL1835MODGB module meets modular approval and labeling requirements.
- Industry Canada follows the same testing and rules as the FCC in regards to certified modules in authorized equipment.

Host Product

- The IC ID of TI WL1835MODGB can be used on the Host End Product with a label that is visible, and displays the IC ID of the WL1835MODGA module
- The customer can refer to TI's [WL1835MODGB IC certification], once available.

Useful Links:

WL1835MODGB IC modular grant

App note on IC modular certification (see section 3.2 inside)^[7]

ETSI ^[8]/CE Certification

WL1835MODGB is designed to CE Certified

The TI WL1835MODGB module has certifications to the appropriate EU radio and EMC directives summarized in TI's Declaration of Conformity) and evidenced by the CE Mark.

This certification eliminates EU RTTE based retesting efforts, resulting in savings of more than \$30K per product model family including test cycling and support resource benefits.

For the conformity implications of attaching the antenna to a module that already has a conformance document -From *section 1.3.1* of the Guide to the R&TTE Directive 1999/5/EC ^[9]

"Manufacturers who place on the market products without an antenna or with an antenna that is intended to allow replacement have a responsibility to provide information on the general types and/or characteristics of antennas that may be used with their equipment in order that the overall radio equipment remains compliant. The guidance of the transmitter manufacturer has to be followed when they are installed."

It is important to note that

- ETSI reports meet CE Radio Approval requirements of the R&TTE (Europe) directive
- TI WL1835MODGB module is tested with ETSI EN300-328 radio tests which can be accepted by a number of countries for radio compliance.
- ETSI is not a certification or regulatory body but a set of standards.

Host Products

• If a product has minimal risk, it can be self-certified where manufacturers complete a Declaration of Conformity and affixes the CE marking to their own product.

Warning: EMC testing obligations may still be required as determined by the specific end product requirements.

- The end product will need to be filed in each country for certification using the FCC/ETSI reports.
- 40+ countries recognize and accept radio test reports compliant to ETSI standards as part of the filing process. Note that some countries do not recognize modular approval.
- ETSI reports help with End product testing with the module integrated, thus the tests do not need to be repeated.

TELEC^[10]**Certification**

WL1835MODGB is TELEC Certified

- TELEC Certification number for the TI WL1835MODGB Module will be available upon request
- Customers don't need to take additional test for Japan radio raw for WL1835MODGB, when they use the recommended antenna with WL1835MODGB.
- · Customers can find more information about TELEC certifications at these websites
 - Ministry of Internal Affairs and communications (Japan)^[11]
 - Test and Certification Services for Wireless Devices under Japanese Radio Law^[12]

Countries Accepting FCC/ETSI Reports

TI's FCC/ETSI test reports can be used to file for certifications with 40+ other countries.

The end product's manufacturer will need to file in each country for certification using the FCC/ETSI reports. Some countries do not recognize modular approval. FCC/ESTI reports help with End product testing with the module integrated and the tests do not need to be repeated.

- Countries in red, can file FCC/ETSI reports.
 - Certification in these countries, can be as easy as a paperwork exercise and Fees, when accompanied with the FCC/ETSI reports during the filing process.
- Countries in blue are covered by CE Marking

Chile	Costa Rica	Ecuador	Honduras	Mexico	Nicaragua	Paraguay	Peru	Uruguay	Venezuela
Brazil	China	India	Austria	Denmark	Luxembourg	Norway	Slovenia	United States	Albania
Belgium	Germany	Iceland	Latvia	Estonia	Malta	Poland	Spain	Romania	Azerbaijan
Cyprus	Greece	Ireland	Liechtenstein	Finland	Monaco	Portugal	Sweden	Turkey	Bahrain
Czech Republic	Hungary	italy	Lithuania	France	Netherlands	Slovak Republic	Switzerland	United Kingdom	Croatia
Egypt	Israel	Kazakhstan	Kuwait	Macedonia	Mozambique	Nigeria	Qatar	Saudi Arabia	Serbia
Ghana	Jordan	Kenya	Lebanon	Morocco	Namibia	Oman	Russia	Senegal	South Africa
Uganda	Indonesia	Pakistan	Thailand	Australia	Canada	Japan	Zimbabwe	Malaysia	Taiwan
Ukraine	Papua New Guinea	Philippines	Vietnam	New Zealand	United Arab Emirates	South Korea	Singapore		

Note: Please consult with your Telecommunication Certification Body (TCB) regarding any regulatory certifications. The information are recommended guidelines only and shall not be used as a process for regulatory Host End Product, Module or any other regulatory certifications

References

- [1] http://www.fcc.gov/
- [2] https://apps.fcc.gov/kdb/GetAttachment.html?id=cIpbiLbTdDomywhbMgK6ng%3D%3D
- [3] http://www.lsr.com/white-papers/guidelines-for-fcc-permissive-changes
- [4] http://www.ti.com/tool/wl1835modcom8a
- [5] http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=a9f9d244cc20be8b56099003689d6cc3&rgn=div5&view=text&node=47:1.0.1.1.
- 16&idno=47 [6] http://www.ic.gc.ca/Intro.html
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