TCB Workshop

Permissive changes
Permit But Ask Procedure
Modular Approvals

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Permissive Change policies
KDB 178919

- The permissive change rules in Section 2.1043.
  - Modifications that may be made to an RF device without filing for a new equipment authorization
  - three different types of permissive changes;
  - identifies when a permissive change (PC) filing with the Commission is required.
    - Changes to the basic frequency determining and stabilizing circuitry (including clock and data rates), frequency multiplication stages, basic modulator circuit or maximum power or field strength ratings will always require a new FCC ID and a new equipment authorization application to the FCC.
- This document defines <u>general</u> permissive change policies - other more specific policies may be described in other interpretation documents. Permissive changes and policies are addressed in this document as they apply to the following categories:
  - Antenna changes
  - PCB and Hardware changes
  - Enclosure changes
  - Software changes
  - RFE changes
  - Miscellaneous changes
- HAC permissive changes- See guidance in HAC presentation.

Permissive Change policies
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- http://fjallfoss.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?id=33013&switch=P
- When a device is modified, compare old to new. Compare modified device to authorized version.
  - Consider changes to all applicable Rules and Grant filing.
    - Rules includes applicable EMC (e.g. emc levels, indoor use restriction), RFE (e.g. portable use only, SAR levels, device configuration), DFS and HAC* requirements.
      - *HAC permissive change policies in separate publication.
    - Grant filing includes grant condition, device configurations, grant radio parameters, user manual information or warnings. All info required to be reported to the FCC.
- If it is not a permissive change, it is a new identifier.
  - Publication indicates certain changes which require new identifier
- For a Software Defined Radio (SDR), rules are listed in 2.1042(b)3 Power, modulation and frequency changes are allowed for SDRs with a Class III permissive change.
- Like all inquiries, check KDB publications, TCB presentations, FCC website and consult with own TCB staff. We are getting repeat questions from different people in the TCBs on similar or past issues.
  - You may find answers quicker!

Antenna changes summary

- Equivalent-type Part 15 antennas
  - exceptions
    - (1) A UNII device with DFS - Testing of the lowest gain antenna IS required to comply with the DFS requirements. Therefore, a permissive change is required for any antenna with lower gain than previously approved antennas.

    - (2) Portable devices - SAR levels should be compared to those in previous authorizations under the same FCC ID, to determine if a Class I or Class II must be filed (see item 5 below).
- Part 15 new antenna types
  - Requires Class II PC
- Antenna changes to license devices are different than Part 15
  - Consider RFE and Maximum EIRP/ERP rating

Permissive changes summary

- Printed Circuit Board (PCB) or hardware changes:
  - In general, non equivalent part substitution or depopulation requires a new identifier.
    - Exception for non transmitter circuitry.
- Enclosure changes:
  - Small changes in enclosure allowed
- Software changes:
  - For non SDR, certain frequency, power and modulation changes allowed under certain circumstances.
    - Software change must be done by grantee. Not on field units.
- Consider RFE and Miscellaneous permissive change policies in this document.

Permit But Ask
KDB 388624

- http://fjallfoss.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?id=28319&switch=P
- Get FCC guidance **before** testing. Not when all testing is complete and the filing is ready to grant.
- Follow PBA procedure
  - Provide information listed in PBA procedure
  - TCBs need to demonstrate that they have clearly reviewed the application and are asking a very specific question or if they are a lab, they need to be clear on what is the test guidance they are looking for
  - Propose test procedure whenever possible.
    - Proposed test procedure can be a modification of an acceptable procedure. Indicate the test procedure and the proposed changes.
- TCB is still responsible for reviewing entire filing for compliance not just reviewing FCC guidance given.
  - E.g. If FCC guidance is given for SAR, TCB reviews EMC.
- KDB 388624 recently modified to add permanent confidentiality of internal photo's, manuals and to add LTE and 802.20 devices on the list for SAR.

Inquiry info needed

- PBA inquiries are directed to appropriate staff.

- Pick the correct inquiry Categories on all applicable levels.

- In the <u>Subject</u> box, identify the applicable PBA condition(s) (EMC/Radio Parameters, Evaluation of SAR, or Other);

- In the message text box, provide the following:
  - Identify the Rule part(s) under which authorization for the device will be requested;
  - Describe the device, the reason for filing and the guidance sought, and the equipment class(es) of the device;
  - Identify the applicable description associated with the selected PBA Condition(s) - test procedures and/or test equipment; 802.16e; etc.
  - When applicable, indicate proposed test procedure, or associated KDB tracking number of previous inquiry.

Part 15 Modular approvals

- **What is a transmitter module?**
  - A module generally consists of a completely self-contained transmitter that is missing only an input signal and power source to make it functional. A module is designed to be incorporated into another device, such as a personal computer, personal digital assistant(PDA) or utility meter.

- **What is the advantage of a transmitter module?**
  - Once a transmitter is approved as a module, it may be incorporated into a number of host devices that have been separately authorized. The completed product generally is not subject to requirements for further certification. Therefore, transmitter modules save manufacturers the time and any related expenses that would be incurred if a new equipment authorization were needed for the same transmitter when it is installed in a new device.

Part 15 Modular approvals

- **What are the approval requirements for a self-contained transmitter module?**
  - Parties that wish to obtain approval for a self-contained transmitter module must submit an application for certification to the FCC or a designated TCB. The application must show that the module complies with the eight requirements summarized below.

    Specifically, the module must:

    1) have its own radio-frequency shielding

    2) have buffered modulation/data inputs to ensure that the device will comply with the Part 15 requirements with any type of input signal

    3) contain power supply regulation

    4) contain a permanently attached antenna or a unique antenna connector

    5) be tested in a stand-alone configuration

    6) be labeled with its own FCC ID

    7) comply with any specific rules applicable to the transmitter

    8) comply with RF safety requirements

Please refer to 47 C.F.R. § 15.212 for more detailed information on the transmitter module approval requirements and 47 C.F.R. § 2.901, *et. seq.* for information on the equipment certification procedures.

Part 15 Modular approvals

- **What is a split transmitter module?**
  - These transmitters consist of two basic components: the "radio front end" or radio elements and the "firmware" or hardware on which the software that controls the radio operation resides.
  - Allows flexibility to sell these components separately and can mix and match components with the use of security codes.

Part 15 Modular approvals

- **What are the approval requirements for a split transmitter module?**
    - Split transmitter modules must comply with the requirements for self-contained modules listed above, excluding requirements 1) and 5). In addition, split transmitter modules must comply with the four requirements summarized below:
        - 1) only the radio-frequency section of the module must be shielded
        - 2) the two sections of the module may exchange data and control information
        - 3) the sections of a split module must be tested together in a representative device
        - 4) they must contain measures such a security codes to ensure that only sections of a module that have been approved together will function together in a host device

- TCBs are not be permitted to certify split transmitter modules until the FCC has more experience with them and can properly advise TCBs on how to apply the applicable rules.

Part 15 Modular approvals
Limited vs Full modular approval

- **Limited modular approval is described in Section 15.212(b).**
  - **A limited modular transmitter may be granted if it does not meet modular requirements listed in 15.212(a) and if compliance can be demonstrated under the operating conditions in which the transmitter will be used (e.g. grant conditions are needed for compliance).**
  - **For RF Exposure compliance, portable modular transmitters are limited if compliance is required to be demonstrated in a specific host (e.g. host required to show compliance with SAR)**
    - **Mobile and fixed modular approved transmitters are not limited, unless they are limited to a particular product or limited for some other reason.**
- A full modular approval is one that is not limited.

Licensed modular approvals

- Unlicensed Part 15 Modular rules or Old Part 15 modular PN notice do not apply to license modules.
  - Good engineering practice to follow requirements.
    - Compliance requirements must be documented.
    - Grantee is responsible for compliance
- Electronic display of FCC identifier for license modules is acceptable.
  - Use same requirements for electronic displays in labelling pub KDB: 784748
    - Electronic displays on device is not required. May use host electronic display
- Split modular approvals do not apply to license modules.
- Licensed modular grant requirements
  - The maximum antenna gain to ensure compliance with rules such as EMC (e.g. EIRP, PPSD limits) or RF exposure requirements is listed on the Grant
  - The licensed module must have a FCC ID label on the module itself. The FCC ID label must be visible through a window or it must be visible when an access panel, door or cover is easily removed. If not, a second label must be placed on the outside of the device that contains the following text:

    Contains FCC ID: xxxyyyzzz
- Limited modular approval for licensed devices.

  A license modular approval is designated as "limited" when compliance is demonstrated in a particular product configuration (e.g. installed in a specific host for SAR testing).
  - The manufacturer must demonstrate that it will retain control over the final installation of the device such that compliance of the end product is assured.
  - Applies mostly to portable devices.

Licensed and unlicensed Modular approvals

- Ensure proper installation and operating instructions such as for end users and OEM installers are consistent with the entire Certification filing (e.g. Grant condition, test report, manual, modular attestation letter)

- Non-modular approvals are not modules. For Non-modular transmitters integrated in a host such that the FCC identifier is never viewable and creates a new device, a new identifier is required for the new device.
  - Use of "This device contains FCC ID: XXX" is only for modular approvals.

2008 Biennial review

- 2008 Biennial review
  Released: 09/04/2008. THE COMMISSION SEEKS PUBLIC COMMENT IN THE 2008 BIENNIAL REVIEW OF TELECOMMUNICATIONS REGULATIONS. (Dkt No 08-177, 08-178, 08-179). Comments Due: 10/06/2008.

- Reply Comments Due: 10/27/2008. (FCC No. 08-201). OGC. Action by: The Commision
  http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-08-201A1.pdf

KDB Updates

- Permit But Ask   KDB 388624
  - Permanent confidentiality of internal photos
  - LTE and 802.20
- Permissive Changes KDB 178919
  - Part substitution for chips clarified
- Part 15 and Part 18 Labeling KDB 784748
  - Electronic display policies added
- HAC; KDB 285076
  - HAC presentation policies
- Modular approval; pending
  - Presentation policies
- UPCS; pending
  - # Duplex channels for DECT-iq defined = Long slots + full slots

The End