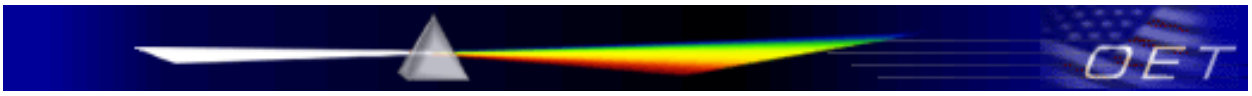

Federal Communications Commission
Office of Engineering and Technology
Laboratory Division

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PRE-APPROVAL GUIDANCE LIST

I. INTRODUCTION

In establishing the requirements for the Telecommunications Certification Body (TCB) program, the Commission stated that while it intended to allow TCBs to certify a broad range of equipment, certain functions should continue to be performed by the Commission. To certify certain types of equipment for which the Commission has not yet established specific guidelines, where a new technology or new rule part is integral, where there is an obligation by the Commission to approve an authorization, or where there is a need to provide case-by-case guidance, the Commission has adopted the Pre-Approval Guidance (PAG) procedure described in KDB Publication 388624 D01.

In general a TCB needs to follow the PAG procedure when the required test procedures, test equipment, or requirements necessary to configure, support or test a device have not been established. This may be the case when: the available test procedures do not readily support the modulation or radio parameters of a device, such as for multiple transmissions or wideband waveforms; the required test procedures need modification for testing a device; or an alternative measurement procedure is proposed. This document provides guidance indicating which types of devices are subject to PAG requirements.

II. PRE-APPROVAL GUIDANCE LIST

There are three classes of applications for equipment authorization subject to a PAG review, prior to approval by a TCB:

A. Devices subject to special conditions where the authorization procedures to be used must be approved by the FCC *prior* to approval by a TCB:

1. RF exposure limits are not fully established or when §§ 1.1307 (c) or (d) applies.[1]
2. When § 2.1091(d)(4) of the FCC rules applies and SAR evaluation is required.
3. RF exposure evaluations using numerical simulations or computational modeling techniques.
4. Portable transmitters operating at frequencies below 100 MHz and SAR evaluation is required per *published RF exposure KDB procedures*; or portable transmitters operating at frequencies above 6 GHz and routine RF exposure evaluation is required.[1]
5. Portable transmitters operating with source-based, time-averaged maximum output power and separation distance requirements exceeding the "SAR Exclusion Threshold" in KDB Publication 447498 by either: (a) 8 times or more, for compliance with general population exposure

[1] In some circumstances when it is determined that RF exposure evaluation is not necessary, such as low power or low exposure conditions, and after consultation with the FCC, permission may be given for a TCB to approve devices that are subject to these conditions without submitting a PAG request.

requirements; or (b) 20 times or more, for compliance with occupational exposure requirements; and, when published RF exposure KDB procedures are not established for SAR testing or when SAR data is not provided to support compliance.

B. Devices for which a sample must be submitted to the FCC for pre-approval testing prior to approval by a TCB:[2]

1. Unlicensed National Information Infrastructure (U-NII) devices with Dynamic Frequency Selection (DFS) capability (Part 15 Subpart E), including client devices operating in the DFS bands that have radar detection capability.

2. Television Band Devices (TVBD) operating under Part 15 Subpart H.

3. Citizen Broadband Radio Service Devices (CBSD) operating under Part 96.

C. Devices for which there are new or unique operation or installation issues which are subject to FCC review prior to approval by a TCB:

1. RF Exposure Evaluation

   a. When SAR measurement is required, for all Time-Division Duplex (TDD) implementations, except when guidance is available in the *published RF exposure KDB procedures*.[3]

   b. 3GPP: When SAR measurement is required for Release 6 HSPA, Release 7 E-EDGE and HSPA$^+$ or Release 8 DC-HSDPA (except when there is a KDB inquiry that confirms the SAR test setup used is acceptable);[4] or Release 10 or higher (except for network enhancement features and downlink only carrier aggregation when SAR test exclusion applies)[5].

   c. 3GPP2: CDMA 2000 1x EV-DV, EV-DO Rev. B or higher.

   d. WiMax implementations that are not fully compliant to IEEE Std 802.16e or the procedures in KDB Publication 615223 are not fully applicable; including those using: AMC zone; other than 5 ms frames; or more than 18 UL symbols in a frame.

   e. IEEE Std 802.20 / iBurst / HC-SDMA.

   f. When simultaneous transmission SAR measurement is required (see enlarged zoom scan measurement and volume scan post-processing in KDB Publication 865664 D01). Regardless of SAR test exclusion or measurement requirements, when the simultaneously transmitted signals are coherent.[6]

   g. When the *published RF exposure KDB procedures* do not readily support the form factor, design or implementation of a product or exposure condition, or when non-standard phantom configurations or test procedures are used for SAR testing. Devices requiring, or tested with, a phantom or test configurations that are not specified in the *published RF exposure KDB*

[2] Test samples are not to be submitted until requested via the FCC Equipment Authorization System (EAS). For any individual application the FCC may waive sample submittal at its discretion.

[3] *See* KDB Publication 447498 for *published RF exposure KDB procedures*.

[4] *See* KDB Publication 941225 D02 for details.

[5] *See* KDB Publication 941225 D05A for details.

[6] *See* KDB Publication 865664 D01 and KDB Publication 447498 D01 for additional information on coherent signal conditions.

procedures. For example, when a flat phantom is not used for testing extremity SAR in hands, wrists, feet or ankles or when the SAM phantom is used for testing exposure conditions other than handsets, such as wrist- or head-worn devices, operating next to the ear.

h. When SAR test reduction is applied not in accordance with KDB Publication 643646 to occupational handheld push-to-talk (PTT) radios, or when KDB Publication 643646 is applied and the highest reported SAR is > 6.0 W/kg.

i. When *published RF exposure KDB procedures* are not available or applicable for testing any uplink MIMO or transmit antenna diversity configurations, including all 3G/4G technologies.

j. When dynamic antenna tuning is applied to optimize transmission efficiency for wide range frequency operations or other operating requirements.[7]

k. When a power reduction feature is used to reduce the transmit power; except:

   (i) when the power reduction is implemented using a single fixed level of reduction through static table look-up for all exposure test configurations in a single wireless operating mode of a frequency band and it is triggered by a single event or operation; or

   (ii) when simultaneous transmission requires power reduction and it is not implemented for satisfying SAR compliance requirements, where simultaneous transmission SAR test exclusion is applied according to the *reported* standalone SAR tested at the maximum output power level without any power reduction.

l. When power increase feature is applied to selectively boost the maximum conducted output power in specific wireless modes or operating configurations without exceeding the maximum output (*e.g.,* radiated output, allowed by the equipment certification).

m. When proximity, device tilt or other sensing features are used to reduce the transmit power; except when *published RF exposure KDB procedures* are applicable to the specific implementation and applied for testing (*e.g.,* KDB Publication 616217).[8]

n. When a low duty factor analysis report is required to qualify for SAR test exclusion or reduction.

[7] A PAG is not required, provided it is fully explained in the SAR report, when the antenna tuning and operating parameters are implemented using a fixed table look-up mechanism that is fully contained within the approved transmitter; therefore, antenna tuning is static and remains unchanged for the same device operating configurations. The same set of parameters and components must be active for each condition regardless of when and how the device is used. When antenna tuning conditions may change for the same operating conditions and exposure conditions, a PAG is required to determine SAR test requirements according to the individual implementations.

[8] If a PAG is not required for power reduction based on the application of the *published RF exposure KDB procedures* for the specific proximity sensing implementation this must be fully explained in the SAR report. When the antenna and sensor are near the corner of a tablet or similar devices, a KDB inquiry is necessary to determine if additional SAR tests are required.

o. When *published RF exposure KDB procedures* are not applicable for mobile and portable devices designed to transmit simultaneously using multiple channels in single or multiple frequency bands, or transmit using "carrier aggregation techniques" for contiguous or non-contiguous channels. For example, devices using these techniques in 3GPP or 3GPP2 operations, or not in accordance with IEEE Std 802.11ac-2013 or KDB Publication 248227.[9]

p. Technologies operating with wide channel bandwidths or transmission bands where the SAR probe calibration and tissue-equivalent dielectric medium may not fully support such wide band measurements or when specific KDB procedures are not applicable (*e.g*. IEEE Std 802.11ac-2013 in KDB Publication 248227).[10]

q. Wireless power transfer applications, except when as specifically excluded by Section 5.2 of KDB Publication 680106 D01 or when test and approval guidance is available through *published RF exposure KDB procedures* for the specific implementation (*e.g.,* wireless charging accessories used as clients with handsets that satisfy the requirements of KDB Publication 648474 D03).[11]

2. Other Conditions

a. For EMC and radio parameter evaluation of certain devices designed for transmitting simultaneously in multiple bands or using special MIMO techniques, unless specific guidance has been provided, e.g., as in the case of devices using IEEE Std 802.11ac-2013 (KDB Publication 644545). Currently the following are subject to the PAG requirements:

(i) Devices operating using LTE-Unlicensed (LTE-U) and LTE License Assisted Access (LAA) capabilities,

(ii) Devices using massive or cooperative MIMO techniques.

b. Requests for permanent confidentiality under exceptional circumstances for exhibits that are not typically held confidential. Requests for keeping external photos, or other exhibits which are normally not eligible for "Long Term Confidentiality" as noted in KDB Publication 726920 D03, require a submission of PAG.[12]

c. Devices subject to Part 90 Subpart Z rules for operation in the 3650-3675 MHz band supporting either restricted or unrestricted contention based protocol (KDB Publication 552295).

d. Devices requesting approval or Class III permissive change for Software Defined Radio (SDR) subject to § 2.944 (KDB Publication 442812).

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[9] When routine evaluation is not required for mobile exposure conditions, the PAG requirement may be waived when issues relating to estimating MPE compliance for multiple carrier simultaneous transmission are fully addressed in a KDB inquiry.

[10] *See* KDB Publication 865664 D01 for SAR probe calibration and tissue dielectric parameter requirements.

[11] When test and approval guidance is unavailable, a KDB inquiry is typically required to determine RF exposure evaluation requirements. When the maximum output power or exposure potential is low, PAG requirement may be waived after it is determined in KDB inquiries that RF exposure testing is not required for an individual device.

[12] As discussed in KDB Publication 726920, if a non-disclosure agreement (NDA) or some similar arrangements are required between the user and the grantee, and a sample NDA is included in the application, such applications are not subject to PAG.

e. Class II permissive changes for devices that have not been approved as Software Defined Radio (SDR), but the grantee intends either under their control or to authorize certain approved third parties to change the circumstances under which the transmitter operates by distribution of the software to field deployed devices (KDB Publications 178919 and 594280).

f. Transmitters operating under the special provisions of spectral efficiency specified in § 90.203(j)(8) for slower data rate where case-by-case consideration is necessary (KDB Publication 579009).

g. Handsets subject to § 20.19 - Hearing Aid Compatible (HAC) mobile handsets - demonstrating T-coil compliance for devices supporting Voice over IP transport for Wi-Fi by testing in accordance with KDB Publication 285076 D02 T-Coil testing for CMRS IP.

h. Split modular transmitters authorized under § 15.212 (KDB Publication 996369).

i. Implanted transmitters with maximum total available output power > 1.0 mW, except Part 95 MedRadio.

j. 700 MHz Band Transmitters (698 to 806 MHz, Part 74).

k. MedRadio transmitters designed to operate in 413-419 MHz, 426-432 MHz, 438-444 MHz, 451-457 MHz, and 2360-2400 MHz bands (Part 95 Subpart I).

l. Devices restricted to use by only State, Local, or Federal law enforcement agencies.

m. Ultra-wideband devices operating under Part 15 Subpart F.

CHANGE NOTICE

06/26/2015: 388624 D02 Pre-Approval Guidance List v16 replaces 388624 D02 Permit But Ask List v15r03. The document has been revised to address the changes to the new Pre-Approval Guidance procedure established in Report and Order FCC 14-208. Added new items for Citizens Broadband Radio Service, LTE-U and massive MIMO.

10/16/2015: 388624 D02 Pre-Approval Guidance List v16r01 replaces 388624 D02 Permit But Ask List v16. Clarified II.C.2.a. to better align with II.C.1.o.

04/08/2016: 388624 D02 Pre-Approval Guidance List v16r02 replaces 388624 D02 Pre-Approval Guidance List v16r01. Removed requirements to submit PAG samples for UWB devices; clarified EMC simultaneous transmission requirements; clarified confidentiality issues; removed VoLTE HAC but kept VoWiFi; removed signal boosters; removed UNII-1 and Wi-Fi client peer-peer applications.