



**Federal Communications Commission  
Office of Engineering and Technology  
Laboratory Division**

**October 11, 2024**

**PRE-APPROVAL GUIDANCE LIST**

**1. INTRODUCTION**

In establishing the Telecommunications Certification Body (TCB) program requirements, the Commission stated that while it intended to allow TCBs to certify a broad range of equipment, the Commission should continue to perform certain functions.

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 by rule<sup>1</sup> the Pre-Approval Guidance (PAG) procedure. The procedure is described in the companion attachment, 388624 D01 Pre-Approval Guidance, of this KDB (388624) publication.

This document is the “Pre-approval Guidance List” that identifies the current PAG items.<sup>2</sup> Each PAG item uses a six-character identification code organized under six categories:

- RF Exposure
- Sample Submission
- EMC Radio Parameters
- Administrative
- Rule Part Specific
- Hearing Aid Compatibility

A TCB is required to use all the applicable PAG codes when submitting a PAG<sup>3</sup>.

Section III below provides a list of specific PAG items<sup>4</sup> by code that are permitted to request PAG Reuse as described in KDB Publication 388624 D01.

The appendices are identified by PAG code and provide a checklist guide for TCBs to use when submitting a PAG.

**2. PAG LIST**

---

<sup>1</sup> § 2.964(a): The Commission will publish a “Pre-approval Guidance List” identifying the categories of equipment or types of testing for which Telecommunication Certification Bodies (TCBs) must request guidance from the Commission before approving equipment on the list.

<sup>2</sup> The D02 Pre-Approval Guidance List document’s version and revision tag (i.e. v01r02) of the published documents represent the current PAG items.

<sup>3</sup> TCBs must use the first category, “PBA Submittal,” and an appropriate second category and identify all applicable PAG items. Then, for each 731-application required for a grant, the 731 “Related to a KDB Inquiry” selection shall be set to Yes, and the PAG tracking number shall be inserted into the “KDB Tracking number” field. This is required for each application, even if the PAG item is not related to that individual application. Only after the FCC reviews the PAG and sets the “KDB Permit but ask reviewed” to Yes for all applications can the TCB grant all applications.

<sup>4</sup> Only PAG items on the PAG reuse list are eligible to request reuse.

## 2.1 RF EXPOSURE

### 2.1.1 DEVICES REQUIRING APPROVAL FOR AUTHORIZATION PROCEDURES <sup>5</sup>

#### NUMSIM

When RF exposure compliance demonstration relies, either fully or partially, on numerical simulations/modeling techniques. A checklist for this PAG item is provided in [Appendix NUMSIM](#).

**Exceptions.** A NUMSIM PAG *is not required* for any of the following cases:

- Numerical computations for processing or visualizing measurement data do not require a PAG; the rationale is that, in this case, the numerical processing does not add any additional physical content. For instance, SAR can be computed from measurements of the electric field.
- When EM fields in certain positions are estimated via an extrapolation method that uses measured data in other (typically nearby) positions, the rationale is that in this case, the estimate is an approximation based on existing data and is not based on a physical simulation of the DUT. On the other hand, if test data are being used to initialize or constrain a simulation model (such as an EM field solver), then NUMSIM is required.

#### OVER6G

RF exposure evaluation of portable transmitters operating at frequencies above 6 GHz, except when related to a C2PC in U-NII Bands 5.925-7.125 GHz for an already certified module addressing RF exposure conditions for a specific host(s). A checklist for this PAG item is provided in [Appendix OVER6G](#).

#### PWRCNG

Devices that change their conducted output power during transmission to ensure RF exposure compliance. This includes, but is not limited to, Time-Average SAR schemes, changes in the transmission duty factors, and detection of specific use conditions, such as body proximity. Accordingly, a PAG is not required when power reduction is not implemented for RF Exposure compliance, for instance, to save battery charge or to avoid device overheating.

**Exceptions.** A PWRCNG PAG *is not required* for the following cases: Devices that implement capacitive proximity sensors for power reduction and apply the guidance in KDB Publication 616217 for sensor verification and testing. Thus, devices that infer body proximity conditions through motion detection, for instance, using Hall effect or accelerometer sensors, require a PAG.

- Devices that allow changes of transmission power due to user-chosen modes of operation (e.g., switching on/off hotspot mode, airplane mode, open/close lid configurations for convertible laptops, etc.).

#### CHECKLIST FOR THE PWRCNG PAG REVIEW

1. Description of the purpose and operation of power reduction technology.
2. Demonstration of proper triggering functionality, with time-dependent plots showing response to changing conditions. For instance, trigger response for proximity detection when a person's body is going in/out of range sensor near the detection distance threshold. Possible hysteresis effects should also be described.

---

<sup>5</sup> Per KDB Publication 388624 D01, devices in this class of PAG have no published guidance, or it may be unclear how rules or policies apply to the technology in question. Thus, FCC must make the determination on procedures used for compliance demonstrations. This guidance must be obtained through the KDB Inquiry system prior to an approval, so that the TCB knows how to properly evaluate the test procedures and results as part of its initial review.

3. Demonstration of compliance in the full range of conditions for which the power control is designed to operate (e.g., closest/furthest distance for proximity sensors, switching between different combinations of active transmitters because of external factors, such as connections to different base stations or access points, etc.)
4. Demonstrate why the chosen set of operating as described in the previous item (3) is effectively complete, or if there are situations that are not considered and tested in (3), they are included as part of the “failsafe scenarios” as in the following item (5).
5. Failsafe scenarios: show that the device conservatively defaults to compliant operation conditions in case of failure of the power control system or for situations not included in previous item (3).

## **2.1.2 DEVICES WITH NEW OR UNIQUE OPERATION OR INSTALLATION ISSUES**

### **PHANTM**

When KDB Publication 447498 and other KDB publications referenced therein do not establish procedures that readily support the form factor, design, or implementation of a product or exposure condition, or when phantom configurations or test procedures that are not specified in KDB Publication 447498, and other KDB publications referenced therein, are proposed for SAR evaluation. For example, when a flat phantom is not used for testing extremity SAR in hands, wrists, feet or ankles, or when the SAM phantom or other specific phantoms (described in IEC/IEEE SAR measurement standards) is used for testing other exposure conditions, such as wrist-worn, head-worn devices, or other use conditions that may require field reconstruction techniques or non-standard post-processing procedures to determine the 1-g SAR.

### **OCCPTT**

When SAR test reduction is applied not following 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.

### **ANTTUN**

When dynamic antenna tuning is applied to optimize transmission efficiency for wide-range frequency operations or other operating requirements, this PAG is not required. However, static antenna tuning, i.e., antenna tuning implementations that are the same for any operating conditions using a fixed table look-up mechanism fully contained within the approved transmitter, do not require this PAG.

### **SARWID**

Technologies operating with wide channel bandwidths or transmission bands where the SAR probe calibration and tissue-equivalent dielectric medium may not fully support such wideband measurements, or when specific procedures in KDB Publication 248227 are not applicable, or when KDB Publication 865664 D01 SAR probe calibration and tissue dielectric parameter requirements cannot be met.

### **DUTFCT**

When a duty factor is invoked to demonstrate compliance, an analysis report that shows how the reported duty factor is effectively maintained in all reasonable, even infrequent, use conditions of the device is required.

A PAG is required when:

- the use of a duty factor less than 100% is essential for obtaining RF exposure compliance, and
- The compliance duty factor value is determined by a subjective or approximate assessment, e.g., based on “typical,” averaged, or assumed use-case conditions or conditions that the user can alter.

Accordingly, when the compliance duty factor is instead established and fixed by design (i.e., via hardware, software, or communication protocol), the PAG is not required as long as a filed RF exposure exhibit provides sufficient and verifiable information. For instance, this can be the case for devices that connect to a wireless network only for a time-limited window and with assigned periodicity.

A PAG is also not required when RF exposure compliance is demonstrated for 100% duty factor, regardless of the actual duty cycle use during normal operations.

No linear scaling from a lower duty factor value shall be applied. For example, if SAR is evaluated at 0.7 W/kg for a 10% duty factor, it is impossible to conclude that for 20%, the demonstrated maximum duty factor SAR will be 1.4 W/kg. Similarly, linear scaling shall not be applied when MPE (or TER) limits are used.

#### CHECKLIST

- Provide an analysis demonstrating how the proposed duty factor is effectively maintained in all reasonable, even infrequent, device use conditions.
- Show how the design inherently protects alterations of the maximum duty factor considered for compliance purposes.
- Provide RF exposure evaluations related to the maximum achievable duty factor condition without applying any linear scaling from lower values.

## 2.2 DEVICES REQUIRING SAMPLE SUBMISSION

None is required for this version and revision.

## 2.3 ADMINISTRATIVE

### CONFID

A PAG must request permanent confidentiality for exhibits under exceptional circumstances, as defined in 726920 D01 Confidentiality Request Procedures section IV. A PAG is unnecessary for the long-term confidentiality of external photos and user manuals if the appropriate justification exhibits are filled with the TCB as required in 726920 D01 section II (3) under special conditions. For example, exhibits demonstrate that the circuit board is enclosed in epoxy, and manuals are only provided to customers under a Non-Disclosure Agreement (NDA). Exhibits must include an example of the NDA between the grantee and a purchaser in the filing.

### SOFTDR

Devices requesting approval for Class III permissive change for Software-Defined Radio (SDR) are subject to Section 2.944 (KDB Publication 442812).<sup>6</sup> A checklist for this PAG item is provided in [Appendix SOFTDR](#)

### SWC2PC

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

---

<sup>6</sup> SDR applications are automatically defined by EAS as a PAG and therefore PAG reuse cannot be used. However, when SOFTDR is applicable as a PAG or an item in a MPAG, the TCBs should reference previously approved application by FCC ID, TC # and inquiry number to help expedite the review for this item.

circumstances under which the transmitter operates by the distribution of the software to field-deployed devices (KDB Publications 178919 and 594280).<sup>7</sup>

### **TXSPLT**

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

### **ENFORC**

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

### **WAIVER**

Grants issued under an FCC Waiver<sup>8</sup>. TCB procedures are as follows; see also KDB Publication 502150: (1) the 731 form associated waiver questions must be checked yes; (2) support information must be uploaded; (3) the waiver must be submitted as part of the filing in the cover letter or attestation exhibit type; (4) a letter from the grantee indicating how the waiver is applicable and indicating that waiver conditions are met; (5) enter grant comments on Form 731 that identifies the waiver by the waiver order and operational restrictions; (6) manuals must include information on the waiver conditions.

### **C2PCPX**

C2PC applications on case-by-case guidance related to accommodating non-pin-to-pin compatible parts modifications under procedures provided in KDB Publication 178919 as attachment "Notification 202109-001".

## **2.4 RULE-PART SPECIFIC**

### **SLOWRA**

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

### **MEDIMP**

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

### **UWB15F**

Ultra-wideband devices operating under Part 15 Subpart F. § 15.519 Technical requirements for hand-held UWB systems. A checklist for this PAG item is provided in [Appendix UWB15F](#)

### **UN6GHZ**

U-NII dual clients (6CD), standard power access points (6SD), Fixed clients (6FC), Standard only client (6FX), and "Very Low Power" (VLP) devices authorized in U-NII Bands 5.925-7.125 GHz under the guidance of KDB Publication 987594 require a PAG. The following exceptions do not need a PAG:

- A C2PC for a certified module in U-NII bands 5.925-7.125 GHz addressing RF exposure conditions for a specific host(s).
- Low power indoor access points (6ID), Subordinates (6PP) and Indoor only Client (6XD), as defined in KDB Publication 987594 D01.

---

<sup>7</sup> Certain devices may be approved under the PAG Reuse procedure if the software control mechanisms are identical to previously approved PAG for the same Grantee.

<sup>8</sup> PAG is not required for devices under 273109 D02 Part 25 SCS and CMRS-Bands for Supplemental Coverage from Space (SCS) temporary under implementation FCC 24-28,

## **RDR255**

For field disturbance sensors and radar devices under Section 15.255 following Annex B in KDB Publication 364244 D01 Meas 15.255 Radars.

## **WSD15H**

White Space Devices (WSD) operating under Part 15 Subpart H. Procedures in KDB Publication 416721 are to be followed.

## **MODLIM**

Under 47 CFR 15.212(b) requirements, the Grantee of a limited module that is limited for the five reasons defined in Publication 996369 D01 Module Certification Guide v04 (No RF shielding, No buffered modulation/data inputs, No voltage regulation. for Host professional Antenna installation, cannot be tested stand-alone) must file with the certification application a description of the proposed method used to ensure the host with the limited module installed is compliant. No specific format or template is required for this filing. The Grantee can devise a strategy to be reviewed and approved through a Pre-Approval Guidance (KDB) procedure. Once approved, the same approval can be reused for additional modules by the same Grantee using the same method.

## **MODHES**

Approval for the Host Environment Simulator (HES) design is required for split modules, in 996369 D05 Split Module, for an initial certification or C2PC. Once approved, the same HES can be reused for additional modules by the same Grantee when the same conditions apply.

## **2.5 HEARING AID COMPATIBILITY**

### **HAC5GS**

Demonstrating T-coil compliance under interim procedures defined in KDB Publication 285076 D03 HAC FAQ Question 9, “test VoLTE calls for 5G sub-6 bands when calls cannot be established over 5G air interfaces using base station simulators or callboxes. Note that interim procedures will not be permitted after (11/1/2024). After 11/2/2024, HAC compliance over 5G air interfaces must be demonstrated.

## **3. PAG REUSE LIST**

The following items from the PAG list (Section 2, Section 3, and Section 4 of this document) may be approved using the PAG Reuse procedures outlined in KDB Publication 388624 D01; PAG Reuse is allowed only for the following PAG list items:

**HAC5GS:** HAC PAG list of Section 4.5. Use a PAG formatted by KDB Publication 285076 D03 HAC FAQ Question 9 for reuse approval.

**ANTTUN:** Dynamic antenna tuning.

**TXSENS:** Under PAG item TXSENS, reuse is permitted only for power reduction for convertible laptops utilizing Hall effect or G-sensors.<sup>9</sup>

**MODHES:** The same Grantee when the same conditions apply.

---

<sup>9</sup>Reuse is only applicable for convertible laptops whose screen rotates around 1 axis, from 0 degrees to 360 degrees, in a clamshell style, from closed mode to open mode, to tent mode, and finally to tablet mode. Actual screen lid angles where power reduction triggering occurs, and amount of power reduction may differ in later applications but the same sensor mechanism hardware as the original PAG must be used.

## APPENDIX NUMSIM

### NUMSIM

When RF exposure compliance demonstration relies, either fully or partially, on numerical simulations/modeling techniques.

#### **CHECKLIST FOR THE NUMSIM PAG**

1. Show that the simulation model provides a conservative estimate of the actual RF exposure conditions that pertain to the use conditions which the DUT qualifies to be certified for.  
*Example. The simulation domain is larger than what corresponds to actual conditions based on a known radiation pattern of the DUT for the applicable test separation distance, and the choice of simulated phantom parameters (such as conductivity and dielectric permittivity) is consistent with the use conditions.*
2. Discuss how the modeling results are leveraged, directly or indirectly, to show compliance.  
*Example 1. Show how modeling a certain chosen volume of body tissue is sufficient to represent the worst-case EM field illumination conditions from the DUT.*  
*Example 2. The EM field is computed to show that the E/H ratio is small enough to consider the DUT “predominantly magnetic”, thus, per KDB 680106, allowing compliance to be shown only based on magnetic field probe measurements.*  
*Example 3., The simulation shows that, for a realistic and conservative model, the total radiated power in presence of an appropriate phantom at the required the minimum test separation distance meets a SAR test exemption criterion as discussed in KDB 447498.*
3. Discuss how the model and its numerical input data have been chosen to provide a realistic simulation of the DUT in its worst-case operational conditions.  
*Example. Show that magneto-quasi static conditions are applicable, thus supporting the choice of an MQS model; or that harmonics are negligible so that a frequency-domain solution for the fundamental emissions is sufficiently accurate; or that the time and spatial discretization are consistent with the DUT frequency of operation and its characteristic dimensions.*
4. Demonstrate that the results are numerically converged with respect to key simulation parameters.  
*Example. Changes in the EM field solution (or applicable derived indicators such as SAR and Power Density) become increasingly small for smaller grid sizes and time steps.*
5. Verify the consistency of the simulated EM field vs. basic physical requirements.  
*Example. Continuity of perpendicular and tangential components of the EF field across a material interface,  $\text{div } \mathbf{B}=0$ , etc.*
6. Validate the model as it was applied to the specific DUT simulation.  
*Example. Compare EM field solution vs. “spot check” measured data, and/or compare with theoretical predictions for configurations physically consistent with the simulation. For instance, calculations or measurements for quasi-static conditions cannot be used for validating a full-wave simulation at higher frequencies.*

## **APPENDIX OVER6G**

### **OVER6G**

RF exposure evaluation of portable transmitters operating at frequencies above 6 GHz, except when related to a C2PC in U-NII Bands 5.925-7.125 GHz for an already certified module addressing RF exposure conditions for a specific host(s). A checklist for this PAG item is provided in Appendix OVER6G.

### **CHECKLIST FOR THE PAG REVIEW**

#### **RF Exposure Evaluation Policy for sources with frequency between 6000 MHz and 8500 MHz**

1. For frequencies up to 8500 MHz provide spatial peak SAR evaluation based on IEC/IEEE 62209-1528:2020, along with applicable product-specific procedures among KDB Pubs. 648474, 616217, 941225. SAR test data shall account for device tune-up tolerance (that is referred to as "*Reported SAR*" in KDB 447498).
2. This policy considers a device compliant for Equipment Authorization purposes, so long as the SAR evaluation of step 1. is within the same SAR limits that have been established for frequencies below 6000 MHz (e.g., 1.6 W/kg for 1-g average SAR). In this case, the SAR evaluations are taken as a conservative compliance demonstration to the MPE power density limits of 47 CFR 1.1310(d)(3).
3. Documentation is required to support evaluation with MPE limits providing power density data in accordance with the following:
  - 3.1 For the test configurations of step 1 having the highest SAR, evaluate Incident Power Density (IPD), using a suitable near-field probe and a total-field/power-density reconstruction method (e.g., as per methods in [Pfeiffer, 2019])
  - 3.2 Report estimated IPD measurement uncertainty (e.g., per methods of IEC/IEEE 63195-1:2022)<sup>10</sup>
  - 3.3 Power density test data shall account for device tune-up tolerance.
  - 3.4 If supported by the test system, also report estimated Absorbed (epithelial) Power Density (APD) (e.g., as per method in [Samaras, 2021])
4. The process of steps 1 to 4 shall be repeated for at least five channels, at the channel center frequency, selected to cover uniformly the largest frequency ranges used in the device, between 5925 MHz and 8500 MHz, and consistent with KDB Publication 248227 test configuration provisions.
5. For the purpose of SAR test exemption, analyses of simultaneous transmission combinations of RF sources with frequencies from 4 MHz and 8500 MHz (where the lowest frequency is per KDB Publication 447498-D01 SAR evaluation requirements<sup>11</sup>), may be performed according to the SPLSR approach (*id.*). Accordingly, no further compliance evaluation is needed for all antenna pairs for which the SPLSR exemption is applicable.

---

<sup>10</sup> Similar to that KDB Pub. 865664 D02 has 30% as maximum expanded measurement uncertainty for SAR test data, where PD test data expanded measurement uncertainty > 30% ( $k = 2$ ), methods of e.g., IEC 62479:2010 apply for reporting purposes.

<sup>11</sup> The lowest frequency of 4 MHz for SAR measurements is per 2022 FCC Equipment Authorization presentations and 2022 revision version of KDB Pub. 447498-D01.



### **One or more RF source(s) operating above 8500 MHz, Including Simultaneous Transmissions**

6. For evaluations and test exemption analyses of simultaneous-transmission combinations of different RF sources, the procedure outlined above, for a single source between 6000 and 8500 MHz shall be included in the calculation of total exposure ratio (TER) as in KDB Pub. 447498-D01-Appendix C.
7. Any source above 8500 MHz shall be evaluated via incident power density measurements.

### **References**

- [Pfeifer, 2019] S. Pfeifer *et al.*, “Total Field Reconstruction in the Near Field Using Pseudo-Vector E-Field Measurements,” *IEEE Trans. EMC*, 61, (2): 476-486 (2019)
- [Samaras, 2021] T. Samaras *et al.*, “Compliance Assessment of the Epithelial or Absorbed Power Density Below 10 GHz Using SAR Measurement Systems,” *Bioelectromagnetics*, 42: 484-490 (2021)
- IEC/IEEE 63195-1:2022 (2022-05), *Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body (frequency range of 6 GHz to 300 GHz) – Part 1: Measurement procedure*
- IEC 62479:2010, *Assessment of the compliance of low-power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)*

## **APPENDIX SOFTDR**

### **SOFTDR**

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

### **CHECKLIST FOR THE PAG REVIEW**

1. Compliance must be demonstrated by answering all questions using the questionnaire Guide of Section II, SOFTWARE DEFINED RADIO SECURITY DESCRIPTION GUIDE, per KDB 442812.
2. The guide in Section II, Software-defined operating parameters, shall include statements that software that controls regulatory compliance is only configurable by the manufacturer or, if applicable, an authorized party.
3. For Any authorized party given the same software regulatory control capabilities, the grantee must provide a detailed description of the licensing or legal arrangement in place that requires the authorized party to adhere to the same security and regulatory requirements applicable to this application.
4. Regulatory configuration security controls must describe in the questionnaire the method used for best practice tamper-proof implementations that are not available to third parties.
5. If a C3PC applies, a cover letter is provided that includes the S/W version identifier and specifies whether existing devices will be field upgraded.
6. If a C3PC is applicable, confirm that the initial Software Security description provided has not changed, or if there are changes, provide a description of the new for this application.
7. Upload software security exhibits to the SDR Software/Security info folder only.
8. The software that controls the RF parameters shall be provided with a high-level, clear operational description or flow diagram.

## **APPENDIX UWB15F**

### **UWB15F**

Ultra-wideband devices operating under Part 15 Subpart F § 15.519.

#### **CHECKLIST FOR THE PAG REVIEW**

1. Show that the device mode operation is permissible under the Part 15 subpart.
2. Specify if § 15.250 (15C) is used as alternative to § 15.519.
3. Show that KDB 393764 Q6 is being followed.
4. Account for all technical requirements specific to each UWB mode of operation.
5. Verify that §15.519 devices do not utilize fixed infrastructure.
6. Verify requirements and restrictions for UWB modular approvals.
7. TCB to include §15.521(a) statement on Grant Restrictions and verify the required device/user manual for all UWB modes of operation.

## **CHANGE NOTICE**

**04/20/2021** 388624 D02 Pre-Approval Guidance List v17 replaces 388624 D02 Pre-Approval Guidance List v16r12. Added identification of PAG items using a 6-digit item Identifier, Clarification on 15.255 (RDR255), Clarification in 6GHz (MOBPOR) for exception to C2PC for RF exposure, added new PAG reuse item TXSENS, and added a PAG item WAIVER. Removed from (v16r12) the PAG list II C II C 2 a (i): Using massive MIMO techniques, II C 2 m: White Space Devices and II C 2 f (i): OTT HAC.

**04/28/2021:** 388624 D02 Pre-Approval Guidance List v17r01 replaces 388624 D02 Pre-Approval Guidance List V17 for corrections. II C 2 m: White Space Devices was incorrectly removed from the PAG list and is now added back as WSD15H. Also, correction made to 5.PAG REUSE LIST, HAC5GS reference to KDB Publication 285076 D03 HAC FAQ Question 8 reference was removed since 285076 D03 HAC FAQ Question 8 is no longer a PAG.

**06/16/2021:** 388624 D02 Pre-Approval Guidance List v17r02 replaces 388624 D02 Pre-Approval Guidance List v17r01 for corrections. Code ANTTUN is the correct one for the antenna tuning item in the reuse list, it replaces the incorrect cross reference to UPMIMO. Removed extraneous wording in OVER6G item. Removed the SARTDD item. Reworded TXSENS, Note 6, Note 7, AGGREG, and Note 8, SARRAY and removed former Note 10. Introduced specific cross-references to KDB publications also in SARWID, NOTSAR, FACTOR, PHANTM, and UPMIMO.

**07/02/2021:** 388624 D02 Pre-Approval Guidance List v17r03 replaces 388624 D02 Pre-Approval Guidance List v17r02 to add item UN5GHZ to the PAG list.

**09/21/2021:** 388624 D02 Pre-Approval Guidance List v17r04 replaces 388624 D02 Pre-Approval Guidance List v17r03 to add item C2PCPX to the PAG list in section 4.3 Administrative Issues. Modified PAG item WAIVER to reference new KDB Publication 502150

**12/03/2021:** 388624 D02 Pre-Approval Guidance List v17r05 replaces 388624 D02 Pre-Approval Guidance List v17r04 to modify for clarification PAG items TXSENS and AGGREG. Current guidance on TXSENS and AGGREG are provided in Appendix A and B respectively in v17r05 of this document. Also Note 11 above was modified to provide clarification for PAG item SOFTDR. Pag item PWRDIN identification code was changed to PWRDYN, for DYN to refer to DYNAMIC.

**07/19/2022:** 388624 D02 Pre-Approval Guidance List v18 replaces 388624 D02 Pre-Approval Guidance List v17r05. v18 is the current list of PAG items. Several changes were introduced to update the content of the list to the reflect more closely the OET present equipment authorization focus. Items removed: RFXLIM, MOBPOR, POR100, SAREXC, NOTSAR, SIMULT, FACTOR, UPMIMO, PWRINC, LODUTY, SARRAY. Items updated: OVER6G, PWRDYN, PHANTM, ANTTUN, PWRRED, AGGREG, SARWID, WPTAPP, DRGAIN, CONFID, SOFTDR, UWB15F, UN6GHZ, UN5GHZ. The item LODUTY was changed and renamed DUTFCT. Checklists were added in the Appendixes for items OVER6G, DRGAIN, SOFTDR, UWB15F. Additional checklists for the items UN6GHZ and UN5GHZ have been added as a separate document in the KDB Publications 987594 D04 and 291074 D04, respectively.

**09/01/2022:** 388624 D02 Pre-Approval Guidance List v18r01 replaces 388624 D02 Pre-Approval Guidance List v18 . UN5GHZ has been changed to add an exception for C2PC for an already certified module addressing RF exposure conditions for a specific host(s).

**09/23/2022:** 388624 D02 Pre-Approval Guidance List v18r02 replaces 388624 D02 Pre-Approval Guidance List v18r01 . DUTFCT has been added for a duty factor less than 100% essential for obtaining RF exposure compliance.

**10/25/2022:** 388624 D02 Pre-Approval Guidance List v18r03 replaces 388624 D02 Pre-Approval Guidance List v18r02. MODLIM has been added for limited modules. MODHES has been added for Split modules.

**10/23/2023:** 388624 D02 Pre-Approval Guidance List v18r04 replaces 388624 D02 Pre-Approval Guidance List v18r03. PAG items UNIDFS have been removed, and RDR255 has been modified to reflect a rule change as amended by FCC 23-35. Note: HAC5GS will not be permitted when removed (Scheduled end Q1 2024), and the interim procedure will not be permitted.

**10/24/2023:** 388624 D02 Pre-Approval Guidance List v18r05 replaces 388624 D02 Pre-Approval Guidance List v18r04. PAG Item WPTAPP has been removed.

**07/01/2024:** 388624 D02 Pre-Approval Guidance List v18r06 replaces 388624 D02 Pre-Approval Guidance List v18r05. PAG Item Updated HAC5GS, MODLIM, RDR255; removed items DRGAIN, MEDRAD, UMFLEX, and UN5GHZ; replaced PWRDYN, PWRRED, and TXSENS with PWRCNG; and made various editorial changes. **10/11/2024** Erratum to change notice 07/01/2024 UN6GHZ was modified such that indoor low-power devices were no longer under PAG.

**10/11/2024:** 388624 D02 Pre-Approval Guidance List v18r07 replaces 388624 D02 Pre-Approval Guidance List v18r06. PAG Item AGGREG and the Appendix AGGREG checklist have been removed. See Erratum added to change notice 07/01/2024.