

Transmitter Category	Transmitters Suitable for TCB Approval <sup>1,2,3</sup>
I) Fixed Transmitters identified in Table 1 of §1.1307	<p>RF exposure compliance for fixed transmitters identified in Table 1 of §1.1307 is handled during licensing by the responsible FCC bureau(s). Except for those indicated in the TCB Exclusion List, all fixed transmitters identified in Table 1 of §1.1307 operating with antenna(s) mounted on outdoor permanent structures may be approved by a TCB. However, the need to separately address RF exposure compliance at the time of licensing must be clearly indicated on a grant of equipment authorization.</p> <p><b><u>See Section A of Review &amp; Approval Procedures.</u></b></p> <p>Pico-base stations, Micro-base stations and other fixed-mounted transmitters operating with indoor antenna(s) that satisfy MPE Categorical Exclusion Limits<sup>4</sup> established in §2.1091 may be approved by a TCB.</p> <p><b><u>See Section B of Review &amp; Approval Procedures.</u></b></p>
II) Fixed Transmitters NOT identified in Table 1 of §1.1307	<p>All other fixed transmitters that have not been identified in Table 1 of §1.1307 are considered categorically excluded from routine RF exposure evaluation for demonstrating compliance. TCB may approve such categorically excluded or unlicensed fixed transmitters provided the antennas are fixed-mounted on outdoor permanent structures with a separation distance of at least 6 meters from all persons. The peak EIRP must not exceed 1000 W and peak conducted output power at the antenna terminal must not exceed 250 W.</p> <p><b><u>See Section C of Review &amp; Approval Procedures.</u></b></p>
III) Mobile Transmitters identified in §2.1091	<p>Transmitters identified in §2.1091, unless categorically excluded, are required to demonstrate MPE compliance by routine evaluation. TCB may approve mobile devices that satisfy MPE Categorical Exclusion Requirements of §2.1091 provided the transmitter does not transmit simultaneously in multiple frequency bands. If the device is a module or operating as part of another transmitter, TCB approval is limited to Part 15 devices only.</p> <p><b><u>See Section D of Review &amp; Approval Procedures.</u></b></p>
IV) Portable Transmitters identified in §2.1093	<p>No portable transmitters that require routine SAR evaluation to demonstrate compliance are currently available for TCB approval.</p>
V) Part 15 Fixed and Mobile Transmitters	<p>Subpart B - there are no RF exposure concerns for equipment operating as unintentional radiators. TCB may approve all fixed and mobile devices qualified under Part 15 Subpart B.</p> <p><b><u>No Specific RF exposure review and approval procedures are necessary.</u></b></p> <p>Subpart C - there should be no significant RF exposure concerns for most fixed and mobile transmitters operating as intentional radiators since they are typically limited by field strength emission limits. Except for selected devices operating under §§15.247, 15.253 and 15.255, TCB may approve all other fixed and mobile devices qualified under Part 15 Subpart C.</p> <p><b><u>Except for those described in the following, no Specific RF exposure review and approval procedures are necessary.</u></b></p> <p>TCB may approve the following fixed and Mobile Spread Spectrum Transmitters operating under §15.247 provided the transmitter operates in a single frequency band and does not operate in conjunction with another transmitter:</p> <p>a) Transmitters operating with antennas that are fixed-mounted on outdoor permanent structures where antenna co-location requirements of §1.1307(b)(3) are not applicable, and there is a separation distance of at least 2 meters between the antenna and all persons (applicable to all frequency bands).</p> <p><b><u>See Section E of Review and Approval Procedures.</u></b></p>

<p>(Part 15 Fixed and Mobile Transmitters Cont'd)</p>	<p>b) mobile transmitters operating with antennas that are installed to provide<sup>5</sup> a separation distance of at least 20 cm from all persons, not co-located with other transmitters, and operating with peak conducted and peak radiated (EIRP) output power not exceeding</p> <ul style="list-style-type: none"> <li>i) 75 mW for 5.7 GHz band</li> <li>ii) 200 mW for 2.4 GHz band</li> <li>iii) 300 mW for 900 MHz band</li> </ul> <p><b><u>See Section F of Review and Approval Procedures.</u></b></p> <p>Millimeter-wave, vehicle radar systems authorized under §15.253, operating with antenna(s) installed permanently on well-defined location(s) of a vehicle and satisfying MPE Categorical Exclusion Requirements of §2.1091. <b><u>See Section G of Review &amp; Approval Procedures.</u></b></p> <p>Millimeter-wave, field disturbance sensor systems authorized under §15.255, operating with antenna(s) permanently installed at fixed locations and satisfying MPE Categorical Exclusion Requirements of §2.1091. <b><u>See Section H of Review &amp; Approval Procedures.</u></b></p> <p>Subpart D - UPCS mobile transmitters are required to meet output power restrictions that exclude such devices from exceeding MPE Categorical Exclusion Requirements of §2.1091. <b><u>See Section I of Review &amp; Approval Procedures.</u></b></p> <p>Subpart E - UNII transmitters with antenna configurations that:</p> <ul style="list-style-type: none"> <li>a) satisfy MPE Categorical Exclusion Requirements of §2.1091. <b><u>See Section J of Review &amp; Approval Procedures.</u></b></li> <li>b) are fixed-mounted on outdoor permanent structures providing a separation distance of at least 1.5 meters from all persons. <b><u>See Section K of Review &amp; Approval Procedures.</u></b></li> </ul>
<p>VI) Part 15 Portable Transmitters</p>	<p>Subpart B – there are no RF exposure concerns for portable devices operating as unintentional radiators. TCB may approve all portable devices qualified under Part 15 Subpart B. <b><u>No Specific RF exposure review and approval procedures are necessary.</u></b></p> <p>Subpart C – there should be no significant RF exposure concerns for most portable devices operating as intentional radiators since they are generally limited by field strength emission limits. Except for selected devices operating under §§15.247, 15.253 and 15.255, TCB may approve most portable devices qualified under Part 15 Subpart C. <b><u>Except for those described in the following, no Specific RF exposure review and approval procedures are necessary.</u></b></p> <p>TCB may approve the following portable Spread Spectrum transmitters authorized under §15.247 provided the transmitter operates in a single frequency band and it is not a module that operates as part of another product or device. When the device does not operate in conjunction with another transmitter and its antenna is not co-located with other antennas, the following are applicable:</p> <ul style="list-style-type: none"> <li>a) the device and its antenna do not operate at closer than 5 cm from a person’s body; by design, the antenna of the device provides a minimum separation distance of at least 2.5 cm from a person’s hands, wrists, feet and ankles, with the peak conducted and peak radiated (EIRP) output power not exceeding             <ul style="list-style-type: none"> <li>i) 100 mW for the 2.4 GHz band</li> <li>ii) 200 mW for the 900 MHz band</li> </ul> <b><u>See Section L of Review &amp; Approval Procedures.</u></b> </li> <li>b) the device and its antenna operate at more than 2.5 cm from a person’s body with the peak conducted and peak radiated (EIRP) output power not exceeding             <ul style="list-style-type: none"> <li>i) 50 mW for the 2.4 GHz band</li> </ul> </li> </ul>

<p>(Part 15 Portable Transmitters Cont'd)</p>	<ul style="list-style-type: none"> <li>ii) 100 mW for the 900 MHz band <b><u>See Section M of Review &amp; Approval Procedures.</u></b></li> <li>c) the device and its antenna operate at less than 2.5 cm from a person's body and the peak conducted with peak radiated (EIRP) output power not exceeding             <ul style="list-style-type: none"> <li>iii) 15 mW for the 2.4 GHz band</li> <li>iv) 25 mW for the 900 MHz band <b><u>See Section N of Review &amp; Approval Procedures.</u></b></li> </ul> </li> </ul>
<p>VII) All Other Categorically Excluded Mobile Transmitters</p>	<p>All other mobile transmitters that have not been specifically identified in §2.1091 or the above are considered categorically excluded from routine evaluation for demonstrating RF exposure compliance. TCB may approve such categorically excluded mobile transmitting devices when the peak conducted and peak radiated (EIRP) output power is:</p> <ul style="list-style-type: none"> <li>a) within the Categorical Exclusion Limits of §2.1091 without requiring any source-based time-averaging duty factor <b><u>See Section O of Review and Approval Procedures.</u></b></li> <li>b) within the Categorical Exclusion Limits of §2.1091 after considering the applicable source-based time-averaging duty factor <b><u>See Section P of Review and Approval Procedures.</u></b></li> <li>c) above the Categorical Exclusion Limits of §2.1091 after considering the applicable source-based time-averaging duty factor, but the antenna installation and device operating requirements provide a minimum separation distance exceeding that estimated with respect to an equivalent isotropic source for ensuring compliance <b><u>See Section Q of Review and Approval Procedures.</u></b></li> </ul>
<p>VIII) All Other Categorically Excluded Portable Transmitters</p>	<p>All other portable transmitters that have not been identified in §2.1093 or the above are considered categorically excluded from routine evaluation for demonstrating RF exposure compliance. TCB may approve such categorically excluded portable transmitting devices when:</p> <ul style="list-style-type: none"> <li>a) the device and its antenna operate with a separation distance of at least 5 cm from a person's body; by design, the antenna of the device provides a minimum separation distance of at least 2.5 cm from a person's hands, wrists, feet and ankles, such as hand-held-hand-operated devices and certain transmitters used in laptop computers, with peak conducted and peak radiated (EIRP) output power not exceeding             <ul style="list-style-type: none"> <li>i) 2.0 W at less than 500 MHz</li> <li>ii) 1.0 W at 500-1000 MHz</li> <li>iii) 500 mW at 1-3 GHz</li> <li>iv) 250 mW at 3-6 GHz,</li> </ul> <p><b><u>and</u></b> the corresponding source-based time-averaged output power does not exceed</p> <ul style="list-style-type: none"> <li>i) 400 mW at less than 500 MHz</li> <li>ii) 200 mW at 500-1000 MHz</li> <li>iii) 100 mW at 1-3 GHz</li> <li>iv) 50 mW at 3-6 GHz</li> </ul> <p><b><u>See Section R of Review and Approval Procedures.</u></b></p> </li> <li>b) the device and its antenna operate with a separation distance of less than 5 cm from a person's body, such as most Part 90 push-to-talk Private Land Mobile Radios, Part 95 Family Radios and devices operating in Simplex, TDD or TDMA modes, with peak conducted and peak radiated (EIRP) output power not exceeding             <ul style="list-style-type: none"> <li>i) 1.0 W at less than 500 MHz</li> <li>ii) 500 mW at 500-1000 MHz</li> <li>iii) 200 mW at 1-3 GHz</li> <li>iv) 100 mW at 3-6 GHz,</li> </ul> <p><b><u>and</u></b> the corresponding source-based time-averaged output power does not exceed</p> <ul style="list-style-type: none"> <li>i) 200 mW at less than 500 MHz</li> <li>ii) 100 mW at 500-1000 MHz</li> <li>iii) 50 mW at 1-3 GHz</li> </ul> </li> </ul>

<p>(All Other Categorically Excluded Portable Transmitters Cont'd)</p>	<p>iv) 25 mW at 3-6 GHz  <u>See Section S of Review and Approval Procedures.</u>                  c) the device or its antenna operate at less than 2.5 cm from a person's body, including body-worn operating configurations using belt-clips, holsters and similar accessories, and the peak conducted and peak radiated (EIRP) output power not exceeding                  i) 200 mW at less than 500 MHz                  ii) 100 mW at 500-1000 MHz                  iii) 25 mW at 1-6 GHz  <u>and</u> the corresponding source-based time-averaged output power does not exceed                  i) 50 mW at less than 500 MHz                  ii) 25 mW at 500-1000 MHz                  iii) 5 mW at 1-6 GHz  <u>See Section T of Review and Approval Procedures.</u></p>
<p>IX) All Other Transmitters, Equipment, Devices</p>	<p>Contact FCC to determine if such devices are applicable for TCB approval.</p>

<sup>1</sup> All transmitters, equipment and devices approved by TCB must qualify for the General Population/Uncontrolled Exposure limits.

<sup>2</sup> For Class II Permissive Changes, TCB must ensure there are no discrepancies or conflicts in output power, operating configurations and RF exposure conditions between the Class II Permissive Change filing and all previously approved equipment operating under the same FCC ID.

<sup>3</sup> TCB may not approve devices that can transmit simultaneously in multiple frequency bands until applicable procedures for handling RF exposure issues are available.

<sup>4</sup> Must satisfy 20 cm separation distance requirement of §2.1091 for mobile transmitting devices, see §2.1091(c) for output power and operating frequency requirements.

<sup>5</sup> With proper device and antenna installation instructions, it should not be the user's burden to maintain a minimum separation distance for satisfying compliance with RF exposure limits.

Review & Approval Procedures

The following procedures should be used to handle RF exposure compliance requirements for devices that qualify for TCB approval.<sup>1</sup>

**Section A :** Fixed Transmitters that operate with outdoor antennas and identified in Table 1 of §1.1307:

- Grant Conditions<sup>2</sup> – The antenna(s) used for this transmitter must be fixed-mounted on outdoor permanent structures. RF exposure compliance is addressed at the time of licensing, as required by the responsible FCC Bureau(s), including antenna co-location requirements of §1.1307(b)(3).
- Because RF exposure is addressed at the time of licensing, TCB should inform the applicant about applicable operating and evaluation requirements, as described in Table 1 of §1.1307, for the transmitter to satisfy RF exposure compliance.
- Specific Procedures: SP(9)

**Section B:** Pico Basestations, Micro Basestations and other transmitters operating with fixed-mounted indoor antenna(s) that satisfy MPE Categorical Exclusion Limits of §2.1091:

- Grant Conditions<sup>2</sup> – The antenna(s) used for this transmitter are to be fixed-mounted on indoor permanent structures providing a separation distance of at least 20 cm from all persons during normal operation. The maximum radiated output power at each antenna [, including any applicable source-based time-averaging duty factor,]<sup>3</sup> must satisfy the MPE Categorical Exclusion Requirements of §2.1091. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> RF exposure compliance may need to be addressed at the time of licensing, as required by the responsible FCC Bureau(s), including antenna co-location requirements of §1.1307(b)(3).
- Specific Procedures: SP(1), SP(3), SP(7), SP(8) and SP(9)

**Section C:** All other fixed transmitters operating with outdoor antenna(s) and have NOT been identified in Table 1 of §1.1307:

- Grant Conditions<sup>2</sup>- The antenna(s) used for this transmitter must be fixed-mounted on outdoor permanent structures with a separation distance of at least 6 meters from all persons during normal operation. The peak conducted output power at each antenna terminal must not exceed --- W and the peak radiated output power must not exceed --- W EIRP. Users and installers must be provided with appropriate antenna installation instructions and transmitter operating conditions, including antenna co-location requirements of §1.1307(b)(3), for satisfying RF exposure compliance.

**Note:** The peak conducted and peak radiated (EIRP) output powers determined from the antenna specifications and measurement results must be inserted in the above Grant Conditions to replace --- W for the corresponding outputs. The peak conducted and peak radiated (EIRP) output powers must not

exceed 250 W and 1000 W, respectively; without considering any source-based time-averaging duty factor.

- TCB must review all applicable information, including output power, antenna gain, cable loss and antenna installation instructions, to ensure the device meets minimum separation distance, conducted output and EIRP requirements.
- Specific Procedures: SP(3), SP(7), SP(8) and SP(9)

**Section D: Mobile transmitters identified in §2.1091 that satisfy Categorical Exclusion Requirements of §2.1091:**

- Grant Conditions<sup>2</sup> – The antenna installation and operating configurations of this transmitter, including [any applicable source-based time-averaging duty factor,]<sup>3</sup> antenna gain and cable loss must satisfy MPE categorical Exclusion Requirements of §2.1091. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. Users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance<sup>4</sup>.
- Specific Procedures: SP(1), SP(3), SP(5), SP(6) except for Part 15, SP(7), SP(8) and SP(9)

**Section E: §15.247 Spread Spectrum Transmitters operating with fixed-mounted antenna(s)<sup>5</sup>:**

- Grant Conditions<sup>2</sup> – The antenna(s) used for this transmitter must be fixed-mounted on outdoor permanent structures with a separation distance of at least 2 meters from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> Users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

**Note:** For point-to-point operations in the 5.7 GHz band with antenna gain exceeding 27 dBi, a separation distance of greater 2 meters may be necessary to satisfy MPE limit. TCB must review all antenna configurations and determine the minimum separation distance for inserting in the above Grant Conditions to replace "2 meters".

- Specific Procedures: SP(2), SP(3), SP(5), SP(7), SP(8) and SP(9)

**Section F: §15.247 Spread Spectrum Mobile Transmitters operating with antenna(s) that are installed to provide a separation distance of at least 20 cm from all persons<sup>5</sup>:**

- Grant Conditions<sup>2</sup> – The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. [This device must transmit with a source-based time-averaging duty factor

not exceeding -- %.]<sup>3</sup> End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

- TCB must verify the peak conducted and peak radiated (EIRP) output power does not exceed
  - 75 mW for 5.7 GHz band
  - 200 mW for 2.4 GHz band
  - 300 mW for 900 MHz band
- Specific Procedures: SP(1), SP(3), SP(5), SP(7), SP(8) and SP(9)

**Section G: Millimeter-wave Vehicle Radar systems authorized under §15.253**

- Grant Conditions<sup>2</sup> – The antenna(s) used for this vehicle radar system must be installed to provide a separation distance of at least 20 cm from all persons during normal operation. Installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.
- TCB must ensure the antenna(s) of a vehicle radar system are for permanent installation, at well-defined locations on a vehicle, for satisfying the operating conditions and MPE categorical Exclusion requirements of §2.1091.
- Specific Procedures: SP(1), SP(3), SP(7), SP(8) and SP(9)

**Section H: Millimeter-wave Field Disturbance Sensor systems authorized under §15.255**

- Grant Conditions<sup>2</sup> – The antenna(s) used for this field disturbance sensor system must be installed to provide a separation distance of at least 20 cm from all persons during normal operation. Installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.
- TCB must ensure the antenna(s) of a field disturbance sensor system are for permanent installation at well-defined locations for satisfying the operating conditions and MPE Categorical Exclusion requirements of §2.1091.
- Specific Procedures: SP(1), SP(3), SP(7), SP(8) and SP(9)

**Section I: Unlicensed PCS (Part 15 subpart D) mobile transmitters**

- Grant Condition<sup>2</sup> – None.
- TCB must ensure the operating configurations and exposure conditions of an Unlicensed PCS transmitter satisfy the mobile transmitting requirements of §2.1091.
- Specific Procedures: SP(7), SP(8) and SP(9)

**Section J:** UNII (Part 15 subpart E) transmitters that satisfy Categorical Exclusion Requirements of 2.1091:

- Grant Conditions<sup>2</sup> – The installation and operating configurations of this transmitter, including [any applicable source-based time-averaging duty factor,]<sup>3</sup> the antenna gain and cable loss, must satisfy MPE Categorical Exclusion Requirements of §2.1091. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. Installers and end-users must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.
- Specific Procedures: SP(1), SP(3), SP(7), SP(8) and SP(9)

**Section K:** UNII (Part 15 subpart E) transmitters operating with antenna(s) that are fixed-mounted on outdoor permanent structures with a separation distance of at least 1.5 from all persons:

- Grant Conditions<sup>2</sup> - The antenna(s) used for this transmitter must be fixed-mounted on outdoor permanent structures with a separation distance of at least 1.5 meters from all persons during normal operation. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> Users and installers must be provided with antenna installation instructions and transmitter operating conditions, including antenna co-location requirements of §1.1307(b)(3), for satisfying RF exposure compliance.
- Specific Procedures: SP(2), SP(3), SP(7), SP(8) and SP(9)

**Section L:** §15.247 Spread Spectrum Portable Transmitter operating with the device and its antenna at a separation distance of at least 5 cm from all persons:

- Grant Conditions<sup>2</sup> – This device and its antenna(s) must operate with a separation distance of at least 5 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> End-users must be provided with specific operating instructions for satisfying RF exposure compliance<sup>6</sup>.
- TCB must verify the device does not operate in the 5.7 GHz band; by design, the antenna operates with a separation distance of at least 2.5 cm from a person's hands, wrists, feet and ankles, and the peak conducted and peak radiated (EIRP) output power does not exceed
  - 100 mW for 2.4 GHz band
  - 200 mW for 900 MHz band
- Specific Procedures: SP(2), SP(4) with xx=5.0, SP(5), SP(6), SP(7), SP(8), SP(9) and SP(10)

**Section M:** §15.247 Spread Spectrum Portable Transmitters operating with the device and its antenna at a separation distance of at least 2.5 cm from all persons:

- Grant Conditions<sup>2</sup> – This device and its antenna(s) must operate with a separation distance of at least 2.5 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> End-users must be provided with specific operating instructions for satisfying RF exposure compliance.
- TCB must verify the device does not operate in the 5.7 GHz band and both peak conducted and peak radiated (EIRP) output power does not exceed
  - 50 mW for 2.4 GHz band
  - 100 mW for 900 MHz band
- Specific Procedures: SP(2), SP(4) with xx=2.5, SP(5), SP(6), SP(7), SP(8) and SP(9)

**Section N:** §15.247 Spread Spectrum Portable Transmitters operating with the device and its antenna at a separation distance less than 2.5 cm from all persons:

- Grant Conditions<sup>2</sup> – This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> End-users must be provided with specific operating instructions for satisfying RF exposure compliance.
- TCB must verify the device does not operate in the 5.7 GHz band and both peak conducted and peak radiated (EIRP) output power does not exceed
  - 15 mW for 2.4 GHz band
  - 25 mW for 900 MHz band
- Specific Procedures: SP(2), SP(3), SP(5), SP(6), SP(7), SP(8) and SP(9)

**Section O:** All other categorically excluded mobile transmitters that do not require any source-based time-averaging duty factor to satisfy Categorical Exclusion Requirements of §2.1091:

- Grant Condition<sup>2</sup> – None.
- TCB must verify the peak conducted and peak radiated (EIRP) output powers (including antenna gain and cable loss) and antenna installation requirements satisfy the Categorical Exclusion Requirements of §2.1091.
- TCB must ensure the device and its antenna(s) are not co-located or operating in conjunction with any other antenna or transmitter.
- Specific Procedures: SP(5), SP(7), SP(8) and SP(9).

**Section P:** All other categorically excluded mobile transmitters that require source-based time-averaging to satisfy Categorical Exclusion Requirements of §2.1091:

- Grant Conditions<sup>2</sup> – The installation and operating configurations of this transmitter, including [any applicable source-based time-averaging duty factor,]<sup>3</sup> antenna gain and cable loss, must satisfy MPE categorical Exclusion Requirements of §2.1091. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. Installers and end-users must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.
- Specific Procedures: SP(1), SP(3), SP(5), SP(7), SP(8) and SP(9)

**Section Q:** All other categorically excluded mobile transmitters that do not satisfy Categorical Exclusion Requirements of §2.1091 and operating with antenna(s) that are installed to provide a minimum separation distance for satisfying MPE compliance:

- Grant Conditions<sup>2</sup> – [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> The antenna(s) used for this transmitter must be installed to provide a separation distance of at least -- cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. Installers and end-users must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

**Note:** The minimum separation distance for all antenna operating configurations to satisfy MPE compliance must be inserted in the above Grant Conditions to replace “-- cm”

- TCB must ensure the selected minimum separation distance allows all antenna operating configurations to satisfy MPE compliance, as estimated according to the maximum device output power radiated from an equivalent isotropic source.
- TCB must ensure that warning statements or labels are not needed for ensuring RF exposure compliance.
- Specific Procedures: SP(2), SP(4) with xx from Grant Conditions, SP(5), SP(7), SP(8) and SP(9)

**Section R:** All other categorically excluded portable transmitters that operate with the device and its antenna(s) at a separation distance of at least 5 cm from all persons:

- Grant Conditions<sup>2</sup> – This device and its antenna(s) must operate with a separation distance of at least 5 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> End-users must be provided with specific operating instructions for satisfying RF exposure compliance.
- TCB must verify that, by design, the antenna operates with a separation distance of at least 2.5 cm from a person’s hands, wrists, feet and ankles, and the peak conducted and peak radiated output powers do not exceed
  - 2.0 W at less than 500 MHz

- 1.0 W at 500-1000 MHz
  - 500 mW at 1-3 GHz
  - 250 mW at 3-6 GHz
- and** the corresponding source-based time-averaged output powers do not exceed

- 400 mW at less than 500 MHz
- 200 mW at 500-1000 MHz
- 100 mW at 1-3 GHz
- 50 mW at 3-6 GHz

- Specific Procedures: SP(2), SP(4) with xx=5.0, SP(5), SP(7), SP(8), SP(9) and SP(10)

**Section S:** All other categorically excluded portable transmitters that operate with the device and its antenna(s) at a separation distance of at least 2.5 cm from all persons:

- Grant Conditions<sup>2</sup> – This device and its antenna(s) must operate with a separation distance of at least 2.5 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> End-users must be provided with specific operating instructions for satisfying RF exposure compliance.
- TCB must verify peak conducted and peak radiated output powers do not exceed
  - 1.0 W at less than 500 MHz
  - 500 mW at 500-1000 MHz
  - 200 mW at 1-3 GHz
  - 100 mW at 3-6 GHz

**and** the corresponding source-based time-averaged output powers do not exceed

  - 200 mW at less than 500 MHz
  - 100 mW at 500-1000 MHz
  - 50 mW at 1-3 GHz
  - 25 mW at 3-6 GHz
- Specific Procedures: SP(2), SP(4) with xx=2.5, SP(5), SP(7), SP(8) and SP(9)

**Section T:** All other categorically excluded portable transmitters that operate with the device and its antenna(s) at a separation distance less than 2.5 cm from all persons:

- Grant Conditions<sup>2</sup> – This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. [This device must transmit with a source-based time-averaging duty factor not exceeding -- %.]<sup>3</sup> End-users must be provided with specific operating instructions for satisfying RF exposure compliance.
- TCB must verify peak conducted and peak radiated output powers do not exceed
  - 200 mW at less than 500 MHz
  - 100 mW at 500-1000 MHz

- 25 mW at 1-6 GHz
  - and** the corresponding source-based time-averaged output powers do not exceed
  - 50 mW at less than 500 MHz
  - 25 mW at 500-1000 MHz
  - 5 mW at 1-6 GHz
- 
- Specific Procedures: SP(2), SP(3), SP(5), SP(7), SP(8) and SP(9)

**Section U: All other non-excluded transmitters that qualify for TCB approval**

- Contact FCC for applicable procedures.

**Section V: “Change of ID” Filings (See Section 2.933(b) of FCC Rules)**

- If the original and subsequent Permissive Change filings for the referenced FCC ID have not addressed RF exposure compliance, the above review and approval procedures are applicable for “Change of ID” filings.

---

<sup>1</sup> If a transmitter can transmit simultaneously in multiple frequency bands, RF exposure compliance must be determined for the total, maximum output power resulted from all frequency bands.

<sup>2</sup> The indicated Grant Conditions are for RF exposure requirements only. Other non-exposure related Grant Conditions must be included as appropriate. When multiple Sections of the Review and Approval Procedures (A-T) are applied to a transmitter, the applicable Grant Conditions must be combined accordingly. Note: the footnote number is not a part of the Grant Conditions.

<sup>3</sup> When source-based time averaging is considered for determining RF exposure compliance, items in [ ] must be included in the Grant Conditions and the appropriate maximum source-based time-averaging duty factor must be inserted to replace -- %. When source-based time averaging is not applicable, the equivalent duty factor is 100%, therefore, peak conduct and peak radiated output powers cannot exceed those specified with source-based time-averaging. See interpretation database for allowable source-based time-averaging duty factors. Note: the footnote number is not a part of the Grant Conditions.

<sup>4</sup> To ensure a device operates according to fixed or mobile transmitter requirements, users and installers should be provided with antenna installation instructions and transmitter operating conditions.

<sup>5</sup> If a spread Spectrum Transmitter operates in both fixed and mobile antenna configurations, Grant Conditions of Section E and F must be combined accordingly

<sup>6</sup> Exposures to portable transmitters can be highly dependent on the operating configurations of individual devices, which usually require specific operating instructions to ensure compliance.

**Specific Procedures**

**SP(1)** - TCB must review all applicable information, including output power, antenna gain, cable loss, antenna installation instructions and applicable source-based time-averaging factors to ensure the device is categorical excluded from routine MPE evaluation under the requirements of §2.1091. When source-based time averaging is considered for satisfying Categorical Exclusion Requirements, the applicable maximum source-based time-averaging duty factor must be included in the grant conditions.

**SP(2)** - TCB must review all applicable information, including output power, antenna gain, cable loss, antenna installation instructions and applicable source-based time-averaging factors, to ensure the device meets the applicable RF exposure requirements of §§1.1307, 2.1091 and 2.1093. When source-based time averaging is considered for satisfying RF exposure compliance, the applicable source-based time-averaged duty factor must be included in the grant conditions.

**SP(3)** - TCB must ensure all necessary information has been included in the appropriate installation and/or users manuals for users and installers to satisfy RF exposure compliance. An “IMPORTANT NOTE” should be included at a conspicuous location in the manual(s) to alert all responsible parties about the specific requirements; example template - “IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the following antenna installation and device operating configurations must be satisfied - .....”

**SP(4)** - TCB must ensure all necessary information has been included in the appropriate installation and/or users manuals for end-users to satisfy RF exposure compliance requirements. This should be a “CAUTION STATEMENT” to alert users that specific conditions are necessary for satisfying FCC RF exposure compliance; for example, “CAUTION: To comply with FCC RF exposure compliance requirements, a separation distance of at least xx cm must be maintained between the antenna of this device and all persons.”

**SP(5)** - TCB must ensure the transmitter operates in a single frequency band.

**SP(6)** – TCB must ensure the device is not a modular transmitter that is installed in, or attached to, another product or device during normal operation.

**SP(7)** - TCB must ensure that there are effective antenna installation instructions and device operating conditions for installers to satisfy RF exposure requirements; when applicable, installers include end-users, OEM integrators and third-party installers.

**SP(8)** - The installation and/or operating instructions must clearly indicate that these conditions are for satisfying FCC RF exposure compliance.

**SP(9)** - TBC must: (1) determine if the Grant Conditions are applicable for the device, and (2) ensure the applicant understands that the specific device operating configurations and antenna installation instructions are for satisfying RF exposure compliance.

**SP(10)** - TCB must verify that, by design, the antenna of the device provides a minimum separation distance of at least 2.5 cm from a person’s hands, wrists, feet and ankles.