| Applica                             | Applicant/Grantee QUALCOMM   |  |              |  |  |  |
|-------------------------------------|--|--|--------------|--|--|--|
| FCC ID: J9C-DC544D2                 |  |  |              |  |  |  |
| Section 15.212 Modular Transmitters |  |  |              |  |  |  |
| Reques                              | t for Modular Approval 🛛 Req   | uest for Limited Modular Approval  |              |  |  |  |
| •                                   | Requirements   | EUT Conditions   | Comply (Y/N) |  |  |  |
|                                     | 1  | Approval Requirements  |              |  |  |  |
| 1                                   | The radio elements of the modular  | Device is equipped with metal shielding to   |              |  |  |  |
|                                     | transmitter must have their own  | cover RF section. Refer to external photos   |              |  |  |  |
|                                     | shielding. The physical crystal and  |  | Y            |  |  |  |
|                                     | tuning capacitors may be located   |  |              |  |  |  |
|                                     | external to the shielded radio elements.                                       |  |              |  |  |  |
| 2                                   | The modular transmitter must have  | All inputs to the modules are buffered   |              |  |  |  |
|                                     | buffered modulation/data inputs (if such                                       | through logic or microprocessor inputs.  |              |  |  |  |
|                                     | inputs are provided) to ensure that the  |  | V            |  |  |  |
|                                     | module will comply with Part 15  |  | Y            |  |  |  |
|                                     | requirements under conditions of   |  |              |  |  |  |
|                                     | excessive data rates or over-modulation.                                       |  |              |  |  |  |
| 3                                   | The modular transmitter must have its  | Power Management Integrated die in   | Υ            |  |  |  |
|                                     | own power supply regulation.   | Package. Refer to Block diagram  | <u> </u>     |  |  |  |
| 4                                   | The modular transmitter must comply  | Device is equipped with unique antenna (   |              |  |  |  |
|                                     | with the antenna and transmission  | u.FL(v)-LP-040) connector.   |              |  |  |  |
|                                     | system requirements of Sections 15.203,  |  |              |  |  |  |
|                                     | 15.204(b) and 15.204(c). The antenna   |  |              |  |  |  |
|                                     | must either be permanently attached or   |  |              |  |  |  |
|                                     | employ a "unique" antenna coupler (at  |  |              |  |  |  |
|                                     | all connections between the module and   |  | Y            |  |  |  |
|                                     | the antenna, including the cable). The   |  |              |  |  |  |
|                                     | "professional installation" provision of                                       |  |              |  |  |  |
|                                     | Section 15.203 is not applicable to  |  |              |  |  |  |
|                                     | modules but can apply to limited   |  |              |  |  |  |
|                                     | modular approvals under paragraph (b)  |  |              |  |  |  |
|                                     | of this section.   |  |              |  |  |  |
| 5                                   | The modular transmitter must be tested   | Device was tested outside the host as a stand-alone configuration for full modular |              |  |  |  |
|                                     | in a stand-alone configuration, <i>i.e.</i> , the                              | approval.  |              |  |  |  |
|                                     | module must not be inside another  | approvai.  |              |  |  |  |
|                                     | device during testing for compliance   |  |              |  |  |  |
|                                     | with Part 15 requirements. Unless the  |  |              |  |  |  |
|                                     | transmitter module will be battery   |  |              |  |  |  |
|                                     | powered, it must comply with the AC  |  |              |  |  |  |
|                                     | line conducted requirements found in   |  |              |  |  |  |
|                                     | Section 15.207. AC or DC power lines   |  | Y            |  |  |  |
|                                     | and data input/output lines connected to the module must not contain ferrites, |  |              |  |  |  |
|                                     | *  |  |              |  |  |  |
|                                     | unless they will be marketed with the module (see Section 15.27(a)). The       |  |              |  |  |  |
|                                     | length of these lines shall be the length                                      |  |              |  |  |  |
|                                     | typical of actual use or, if that length is                                    |  |              |  |  |  |
|                                     | unknown, at least 10 centimeters to  |  |              |  |  |  |
|                                     | insure that there is no coupling between                                       |  |              |  |  |  |
|                                     | the case of the module and supporting  |  |              |  |  |  |
|                                     | the case of the module and supporting  |  |              |  |  |  |

|          | equipment. Any accessories, peripherals,   |  |   |
|----------|--|--|---|
|          | or support equipment connected to the  |  |   |
|          |  |  |   |
|          | module during testing shall be   |  |   |
|          | unmodified and commercially available  |  |   |
|          | (see Section 15.31(i)).  | Two prepared FCC ID lebel formate are  |   |
| 6        | The modular transmitter must be  | Two proposed FCC ID label formats are included in the filing. One of labels is to be |   |
|          | equipped with either a permanently   | placed on the module and the other label is  |   |
|          | affixed label or must be capable of  | to be placed on the outside of system .  |   |
|          | electronically displaying its FCC  |  |   |
|          | identification number.   |  |   |
|          | (A) If using a permanently affixed label, the  |  |   |
|          | modular transmitter must be labeled with its own FCC identification number, and, if the FCC        |  |   |
|          | identification number is not visible when the  |  |   |
|          | module is installed inside another device, then  |  |   |
|          | the outside of the device into which the module is   |  |   |
|          | installed must also display a label referring to   |  |   |
|          | the enclosed module. This exterior label can use   |  |   |
|          | wording such as the following: "Contains Transmitter Module  |  |   |
|          | FCC ID: XYZMODEL1" or "Contains FCC ID:  |  |   |
|          | XYZMODEL1." Any similar wording that   |  |   |
|          | expresses the same meaning may be used. The  |  |   |
|          | Grantee may either provide such a label, an  |  |   |
|          | example of which must be included in the application for equipment authorization, or, must         |  |   |
|          | provide adequate instructions along with the   |  | Y |
|          | module which explain this requirement. In the  |  |   |
|          | latter case, a copy of these instructions must be  |  |   |
|          | included in the application for equipment authorization.   |  |   |
|          | (B) If the modular transmitter uses an electronic  |  |   |
|          | display of the FCC identification number, the  |  |   |
|          | information must be readily accessible and   |  |   |
|          | visible on the modular transmitter or on the   |  |   |
|          | device in which it is installed. If the module is  |  |   |
|          | installed inside another device, then the outside of the device into which the module is installed |  |   |
|          | must display a label referring to the enclosed   |  |   |
|          | module. This exterior label can use wording such   |  |   |
|          | as the following:  |  |   |
|          | "Contains FCC certified transmitter module(s)." Any similar wording that expresses the same        |  |   |
|          | meaning may be used. The user manual must  |  |   |
|          | include instructions on how to access the  |  |   |
|          | electronic display. A copy of these instructions   |  |   |
|          | must be included in the application for  |  |   |
| 7        | equipment authorization.  The modular transmitter must comply                                      | Refer to modular installation manual   |   |
| /        | with any specific rules or operating   | TOTAL TO MODULA INSTANCTION MAINTAIN   |   |
|          | requirements that ordinarily apply to a  |  |   |
|          | complete transmitter and the   |  |   |
|          | manufacturer must provide adequate   |  |   |
|          | instructions along with the module to  |  | Y |
|          | explain any such requirements. A copy  |  |   |
|          | of these instructions must be included in  |  |   |
|          | the application for equipment  |  |   |
|          | authorization.   |  |   |
| <u> </u> | aumonzanon.  |  |   |

| 8 The modular transmitter must comply with any applicable RF exposure requirements in its final configuration. | Transmitter meets MPE calculation of 47 CFR 1.1307 (b) (1). Refer to MPE section of the test reports. | Y |
|--|---|---|
|--|---|---|

A limited modular approval may be granted for single or split modular transmitters that do not comply with all of the above requirements, *e.g.*, shielding, minimum signaling amplitude, buffered modulation/data inputs, or power supply regulation, if the manufacturer can demonstrate by alternative means in the application for equipment authorization that the modular transmitter meets all the applicable Part 15 requirements under the operating conditions in which the transmitter will be used. Limited modular approval also may be granted in those instances where compliance with RF exposure rules is demonstrated only for particular product configurations. The applicant for certification must state how control of the end product into which the module will be installed will be maintained such that full compliance of the end product is always ensured.