| Applicar                            | nt/Grantee   | Roku, Inc.                           |   |              |  |  |  |  |
|-------------------------------------|--|--------------------------------------|---|--------------|--|--|--|--|
| FCC ID:                             |  | TC2-N1001                            |   |              |  |  |  |  |
| Section 15.212 Modular Transmitters |  |                                      |   |              |  |  |  |  |
| Request                             | for Modular  | Approval Req                         | uest for Limited Modular Approval   | X            |  |  |  |  |
| -                                   |  | Requirements                         | EUT Conditions  | Comply (Y/N) |  |  |  |  |
|                                     |  | <b>A</b>                             | Approval Requirements   |              |  |  |  |  |
| 1                                   | The radio ele  | ements of the modular                | The modular have RF own shielding   | Y            |  |  |  |  |
|                                     | transmitter n  | nust have their own                  |   |              |  |  |  |  |
|                                     | shielding. Th  | ne physical crystal and              |   |              |  |  |  |  |
|                                     | tuning capac   | itors may be located                 |   |              |  |  |  |  |
|                                     | external to the  | ne shielded radio elements.          |   |              |  |  |  |  |
| 2                                   | The modular  | transmitter must have                | The modular transmitter have  | Y            |  |  |  |  |
|                                     |  | dulation/data inputs (if such        | buffered modulation/data inputs   |              |  |  |  |  |
|                                     |  | ovided) to ensure that the           |   |              |  |  |  |  |
|                                     |  | comply with Part 15                  |   |              |  |  |  |  |
|                                     | -  | s under conditions of                |   |              |  |  |  |  |
|                                     |  | ta rates or over-modulation.         |   |              |  |  |  |  |
| 3                                   |  | transmitter must have its            | The EUT needs an external host  | Ν            |  |  |  |  |
|                                     | own power s  | supply regulation.                   | regulated power supply regulation, and therefore the device is limited to       |              |  |  |  |  |
|                                     |  |                                      |   |              |  |  |  |  |
|                                     |  |                                      | installation by Roku, Inc. or the OEM integrators in devices that provide the   |              |  |  |  |  |
|                                     |  |                                      | necessary regulated power supply to   |              |  |  |  |  |
| 4                                   | The modular  | transmitter must comply              | the module.   | Y            |  |  |  |  |
| -                                   |  | enna and transmission                |   | 1            |  |  |  |  |
|                                     |  | rements of Sections 15.203,          |   |              |  |  |  |  |
|                                     |  | d 15.204(c). The antenna             |   |              |  |  |  |  |
|                                     |  | be permanently attached or           | The modular must to built-in PIFA   |              |  |  |  |  |
|                                     |  | nique" antenna coupler (at           | applicant together and transmission   |              |  |  |  |  |
|                                     | · ·  | ons between the module and           | system requirements of Sections 15.203, 15.204(b) and 15.204(c).                |              |  |  |  |  |
|                                     | the antenna,   | including the cable). The            | 15.204(0) and $15.204(0)$ .   |              |  |  |  |  |
|                                     | "professiona   | l installation" provision of         |   |              |  |  |  |  |
|                                     | Section 15.2   | 03 is not applicable to              |   |              |  |  |  |  |
|                                     |  | can apply to limited                 |   |              |  |  |  |  |
|                                     |  | rovals under paragraph (b)           |   |              |  |  |  |  |
|                                     | of this sectio   |                                      |   |              |  |  |  |  |
| 5                                   |  | transmitter must be tested           | The EUT module can't be operated by   | Y            |  |  |  |  |
|                                     |  | one configuration, <i>i.e.</i> , the | its own due to its power-less   |              |  |  |  |  |
|                                     |  | t not be inside another              | characteristic and hence needs external   |              |  |  |  |  |
|                                     | device during testing for compliance                                     |                                      | power supply to make it function.   |              |  |  |  |  |
|                                     | with Part 15 requirements. Unless the transmitter module will be battery |                                      | Under testing condition, no matter in pure verification or manufacturing stage, |              |  |  |  |  |
|                                     |  | nust comply with the AC              | the specified test fixture must be  |              |  |  |  |  |
|                                     | -  | ed requirements found in             | provided to help testing the function and                                       |              |  |  |  |  |
|                                     |  | 07. AC or DC power lines             | performance of the EUT sample.  |              |  |  |  |  |
|                                     |  | ut/output lines connected to         | r · · · · · · · · · · · · · · · · · · ·   |              |  |  |  |  |
|                                     | -  | nust not contain ferrites,           |   |              |  |  |  |  |
|                                     |  | will be marketed with the            |   |              |  |  |  |  |
|                                     | -  | Section 15.27(a)). The               |   |              |  |  |  |  |
|                                     |  | se 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  |                                       |   |
|   | equipment. Any accessories, peripherals,   |                                       |   |
|   |  |                                       |   |
|   | or support equipment connected to the  |                                       |   |
|   | module during testing shall be   |                                       |   |
|   | unmodified and commercially available  |                                       |   |
|   | (see Section 15.31(i)).  |                                       |   |
| 6 | The modular transmitter must be  | The FCC identification number can put | Y |
| _ | equipped with either a permanently   | on the modular with either a          |   |
|   | affixed label or must be capable of  | permanently affixed label             |   |
|   | *  | permanentry arrived laber             |   |
|   | 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<br>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 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<br>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  |                                       |   |
|   | equipment authorization.   |                                       |   |
| 7 | The modular transmitter must comply  | The modular have specific rules or    | Y |
|   | with any specific rules or operating   | operating requirements                |   |
|   | requirements that  | -r                                    |   |
|   | -  |                                       |   |
|   | ordinarily apply to a complete   |                                       |   |
|   | transmitter and the manufacturer must  |                                       |   |
|   | provide adequate instructions along with   |                                       |   |

|   | the module to explain any such           |   |
|---|--|---|
|   | requirements. A copy of these            |   |
|   | instructions must be included in the     |   |
|   | application for equipment authorization. |   |
| 8 | The modular transmitter must comply      | Y |
|   | with any applicable RF exposure          |   |
|   | requirements in its final configuration. |   |

A 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.

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