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A: massimo.legnani@rationalseed.com

Oggetto: Response to Inquiry to FCC (Tracking Number 332406)

Inquiry on 08/19/2022 :

Inquiry:

Kind FCC OET,

I have developed a BLE module for one of my customer that has passed FCC modular approval. Now the customer has problems in buying the main transceiver component that originally has a LQFN case due to temporary shortage of the component itself. Despite these problems the customer managed to find the same component but hosted in a different case (WLCSP). The question is: can be applied a class 2 permissive change?

The two components host exactly the same silicon die, that is the transceiver inside is exactly the same. The component can also be found with IEEE 802.15.4 enabled at production but the customer never uses or enables this part (the customer just uses the BLE part). I have a declaration by the manufacturer of this components family that clarifies that all these versions have the same silicon die (that is all the parts enabled or not at production phase are physically present in all the versions). The QFN case has 48 PIN while the WLCSP case has 78 PIN but the added PINs in WLCSP case are all dedicated to GROUND connection (the LQFN has a big central PADs zone and some peripheral PINs dedicated to GROUND while the WLCSP has balls dedicated to GROUND's connections) that is the WLCSP and LQFN have the same signals (not added signals nor added physical functions).

Clearly the component's versions are not PIN to PIN compatible but I remark that the effective internal silicon die is exactly the same (that is the replacement of the chip doesn't constitute a complete replacement of the transmitter - as a matter of fact the transmitter is exactly the same but hosted in a different package) and anyway class II permissive change implies a verification of the radiated behavior. The module has the same antenna in the same position and the same shield in the same position. All the rest of the module is electrically and mechanically unchanged so externally the new module appears the same of the old one. Only layout changing has been applied to adapt the same circuits to the different package of the transceiver component.

The applying of class II permissive change could give to my customer a production versatility that is

essential in this period above all considering that this module is applied in several final devices.

I have studied the KDB 178919 D01 Permissive Change Policy v06 together with the TCB that supports us but I did not find a point that excludes the application of class II permissive change to this specific situation.

I therefore need your opinion.

If you need more information, please don't hesitate to contact me by e-mail.

Best regards,

Massimo Legnani

FCC response on 08/22/2022

Dear Mr. Massimo Legnani,
The FCC has published [Notification 202109-001](#) to help grantees address some of the supply chain issues. Please evaluate if this BLE chip change will meet the 9 conditions set forth in the document to determine if this device can qualify for C2PX. Please keep in mind that only a TCB can submit a C2PCPX PAG inquiry to the FCC.

Regards,
OET Staff

Attachment Details:

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