

Date: 2022/05/03

DEKRA Testing and Certification, S.A.U.  
 Parque Tecnológico de Andalucía  
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 29590 Campanillas  
 Málaga, España

**Ref: Request for Class II Permissive Change for FCC ID: 2A3S7EXR50D42D42Y**

To whom it may concern:

We are applying for a Class II Permissive Change to the FCC approval of the Company name: **Bereva Srl** (FCC Registration Number: **0031686553**), product description: xBALL replacement - electronic ball expansion valve, operated with stepper motor signal from the superheat controller (FCC: **2A3S7EXR50D42D42Y**, Original Grant Date: April 20, 2022).

Alternative transmitter module (BT LE Module), antenna and DC/DC regulator have been included in the BOM as second source components due to current lack of electronic parts. Further, a voltage suppressor and a fusible power resistor have been added to the design to enhance the robustness against surges in voltage and malfunctions.

About RF, there is no significant change in hardware or in existing RF relevant portion: RF output power, frequency and exposure do not change. The only difference is related to the antenna: original module has an integral antenna; the alternative part needs an external antenna (which grants higher gain: 2.14 dBi vs. 1 dBi). Both the modules are from the same manufacturer (Silicon Labs) and are variants of the same model: the FCC ID is the same for both (QOQBGM13P).

Here is the summary of the changes:

Item	Original	Change to	Ref.	Remark
BT LE Module	BGM13P22F512GA-V2	BGM13P22F512GE-V2	U2	Alternative component (first & second source)  Same FCC ID: QOQBGM13P
Antenna	Integral. Gain: 1 dBi	External, dipole type, compatible with U.FL / I-PEX MHF connectors. Gain: 2.14 dBi  146153-0100	J5	Alternative component (first & second source)
DC/DC regulator	TI LV2862YDDCT	MCP16331T-E/CH	U5	Alternative component (first & second source)
Voltage suppressor	-	B72580E0300K062	Z1	Prevents abnormal conditions such as sudden surges in voltage or circuit malfunctions
Fusible power resistor	-	FW30A4R70jA	R57	Prevents abnormal conditions such as sudden surges in voltage or circuit malfunctions



User manual, external photographs, RF exposure, label design and label location do not report any significant change. Operational description and block diagram documents now include the statement of both the BT LE modules and the antennas.

We performed the testing and confirmed that this product still meets the minimum requirements of the applicable rules of FCC. Please refer to the test report submitted with this application.

Sincerely,

A handwritten signature in black ink, appearing to read "Lorenzo Bolognese".

By: Lorenzo Bolognese  
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