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(Limited) Modular Approval Request Letter

Subject: (Limited) Modular Approval
Date 30/10/2014
FCC ID: 2AC5O-WICB

We ABB., hereby authorize EMCCert DR. RAŠEK GmbH to have our model 266 Wireless approved under limited modular approval authorization. The application of this model is specific to mobile host equipment. The requirements regulated in Public Notice DA00-1407 have been fulfilled and clearly explained below.

(i) The radio elements of the modular transmitter must have their own shielding. The physical crystal and tuning capacitors may be located external to the shielded radio elements.

The modular transmitter WICB mount ETERNA2 inside. The "ETERNA2" is now provided by Linear Technology, they bought Dust Networks.
The Eterna is fully shielded by a ground plane within the PCB and the RF shield on the outside.

(ii) The modular transmitter must have buffered modulation/data inputs (if such inputs are provided) to ensure that the module will comply with Part 15 requirements under conditions of excessive data rates or over-modulation. 85

No direct access is provided to the modulator / up converter and as such ETERNA2 can not be stimulated to over-modulate or modify the transmitters data rate

(iii) The modular transmitter must have its own power supply regulation.

The ETERNA2 has it's own power supply regulation, using two integrated DC/DC converters and four voltage regulators. Additional it is supported by several decoupling capacitances as well as by internal converter capacitors.

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(iv) The modular transmitter must comply with the antenna and transmission 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 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.

The transmitter uses an unique antenna coupler, MCX. Additional it is not possible to remove the antenna and the transmitter without the use of appropriate tool. Also the complete device must be disassembled. Due to the construction of the housing it is not possible to use another antenna than the intended one. The access to the housing is locked by appropriate device (screw) and is possible only with special Allen key

(v) The modular transmitter must be tested in a stand-alone configuration, i.e., the module must not be inside another 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 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 equipment. Any accessories, peripherals, or support equipment connected to the module during testing shall be unmodified and commercially available (see Section 15.31(i)).

The modular transmitter was tested according to the requested standard see report .

(vi) The modular transmitter must be equipped with either a permanently affixed label or must be capable of 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 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 equipment authorization.
Marking on device is : “Contains FCC ID : 2AC5O-WICB”

(vii) The modular transmitter must comply with any specific rules or operating requirements that 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. 86

The ETERNA2 complies with all specific rules applicable to the transmitter. No option is provided to the integrator to modify the operation of the transmitter in this regard. Additional all necessary information will be present in the operating manual.

(viii) The modular transmitter must comply with any applicable RF exposure requirements in its final configuration.

The transmitter complies with all RF exposure requirements by specification. The transmitter is not designed to be used so the radiating structure is within 20 cm of the body of the user. As such the transmitter does not fall under the definition of a portable device per FCC Rules in Section 2.1093. While the ETERNA2 qualifies as a mobile device per FCC Rules in Section 2.1091, the transmitter has a maximum radiated output power of W EIRP. As such, the module is below the 3 W power limit that would necessitate environmental evaluation for RF exposure. The ETERNA2 radio does not operate in the bands specified by 15.319(i), 15.407(f), 15.253(g) and 15.255(g).

(2) Split modular transmitters must meet the requirements in paragraph (a)(1) of this section, excluding paragraphs (a)(1)(i) and (a)(1)(v), and the following additional requirements to obtain a modular transmitter approval.

The below points (i) (ii) (iii) and (iv) are not applicable because the modular transmitter cannot be split, the radio front end and the transmitter control element are locate on the same indivisible PCB.

(i) Only the radio front end must be shielded. The physical crystal and tuning capacitors may be located external to the shielded radio elements. The interface between the split sections of the modular system must be digital with a minimum signaling amplitude of 150 mV peak-to-peak.

(ii) Control information and other data may be exchanged between the transmitter control elements and radio front end.

(iii) The sections of a split modular transmitter must be tested installed in a host device(s) similar to that which is representative of the platform(s) intended for use.

(iv) Manufacturers must ensure that only transmitter control elements and radio front end components that have been approved together are capable of operating together. The transmitter module must not operate unless it has verified that the installed transmitter control elements and radio front end have been authorized together. Manufacturers may use means including, but not limited to, coding in hardware and electronic signatures in software to meet these requirements, and must describe the methods in their application for equipment authorization.

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