



epoke®

Feb. 18th 2009

Attn: Reviewing Engineer
Federal Communications Commission
7435 Oakland Mills Road
Columbia, MD 21046

Subject: Limited Modular approval for FCC ID:WXURX001 as per
PUBLIC NOTICE DA 00-1407

To whom it may concern,

The module FCC ID WXURX001 is submitted for Limited Modular approval by Epoke a/s. In keeping with FCC PUBLIC NOTICE DA 00-1407, Part 15 Unlicensed Modular Transmitter Approval, this letter affirms, that Epoke shall retain complete control over the final installation of the device and ensure compliance of the end-product to FCC regulations.

The module shall only be installed into a final product by technicians trained by Epoke a/s. The module shall not be distributed marketed or sold to the general Public. It will only be available installed in a complete Epoke product.

As illustrated by accompanying documentation, the module has its own RF shielding, contains the complete IEEE.802.15.4 radio within the module and includes a fixed gain power amplifier.

The transmitter power supply is regulated internally to the radio IC (MC13212), and the module is in all applications supplied from accommodating circuit inside equipment manufactured by Epoke a/s or otherwise under Epoke a/s' control..

The module is in all applications battery powered (truck mounted equipment) and was tested in a stand-alone configuration without any enclosure and will be labelled with FCC ID and meets RF exposure regulations. A label external to the equipment will state "FCC ID WXURX001 inside".

The module is designed to be connected to one of 3 possible antennas with different gain. The transmit power of the module is adjusted accordingly by firmware integral to the module to meet, but not exceed, the rated power: 10mW.

The following is a point-by-point response to the items listed in DA 00-1407:

Re 1):

The module has its own RF shielding . It has been tested separately for radiated emission with no additional enclosure or shielding to ensure compliance to all radiated emission requirements as a module.

Re 2):

The RF communication related signalling input to the module is bidirectional serial at LVTTL levels.





Compliance to Part 15 requirements is ensured by the IEEE802.15.4 compliant hardware modulator of the integral microprocessor/radio chip and the correct transmit power setting. Signals on two mode pins generated in a fixed manner by the accommodating circuit board determines the setting of transmit power in relation to the relevant antenna. Other I/O from the integrated microcontroller are application specific, but does not in any way influence the modulation or transmit power.

Re 3)

The modular transmitter has its own power supply regulation with the exception of the fixed gain power amplifier, which is supplied from regulated DC power rails in the accommodating circuit board, which is fully under control of Epoke a/s.

Re 4)

The module is to be used with 3 antennas with different gains.

- a) Integral antenna
- b) Low gain antenna with "unique" reverse polarity SMA connector and a short connecting cable with RPSMA bulkhead to UFL connectors.
- c) Low gain antenna with fixed cable and UFL connector.

The transmitter power is adjusted accordingly by the integrated firmware based on static inputs on two mode pins on the module.

Re 5)

The module has been tested in a stand-alone configuration for all radiated emission. Since the module is battery powered (through one or more voltage regulators) conducted emission on the power lines have been tested using a low noise DC power supply. The connecting wires have been in excess of 20cm.

Re 6)

The modular transmitter will be labelled with its own FCC-ID number. Since the label is not visible outside the equipment into which the module is installed, the equipment will be labelled externally with a permanent label reading: "FCC ID: WXURX001 inside". See labeling information provided with this submission.

Re 7)

Since all modulation and IEEE802.15.4 protocol elements are either part of the radio modem chip design or, regarding transmit power, implicitly configured to match the equipment's antenna by mode pin levels in the equipment into which the module is installed, users will not have access nor control which may cause the module to work outside its normal operation limits.

Re 8)

The module has been evaluated with all 3 antennas with the transmitter power set accordingly and complies with RF exposure requirements.

The equipment in which the module is installed is not used in a way that in normal use brings any antenna closer to any person than 25 cm.

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epoke®

Sincerely


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