

## Oticon Radio Model - Quick Installation Guide

### Radio Model Name: Audio Streaming Module XM

The Audio Streaming Module is an accessory board completely equipped with both a microcontroller host and two radio systems on board the same Printed-Circuit-Board (PCB). Besides the host and the radio systems the module also includes a Digital-Signaling-Processor (DSP), an audio codec, a power management circuit, flash memory, a tele coil and small discrete components.

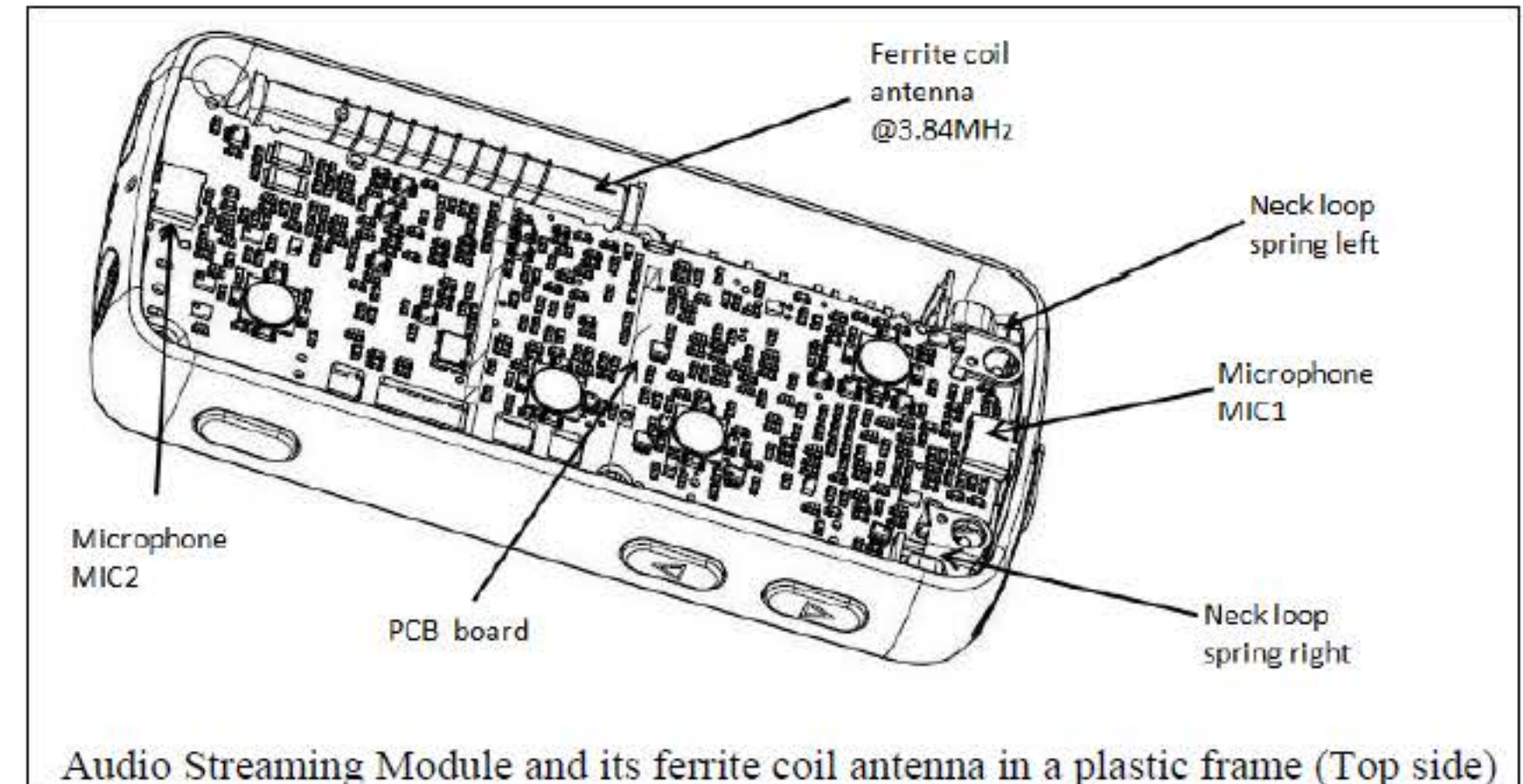
The two radio systems are

- a low power, inductive radio transmitter working at 3.84 MHz (including no active receiver) and
- a 2.4GHz radio transceiver, which is intended both for proprietary use and compatible with Bluetooth enabled wireless accessories, such as wireless headsets and mobile phones.

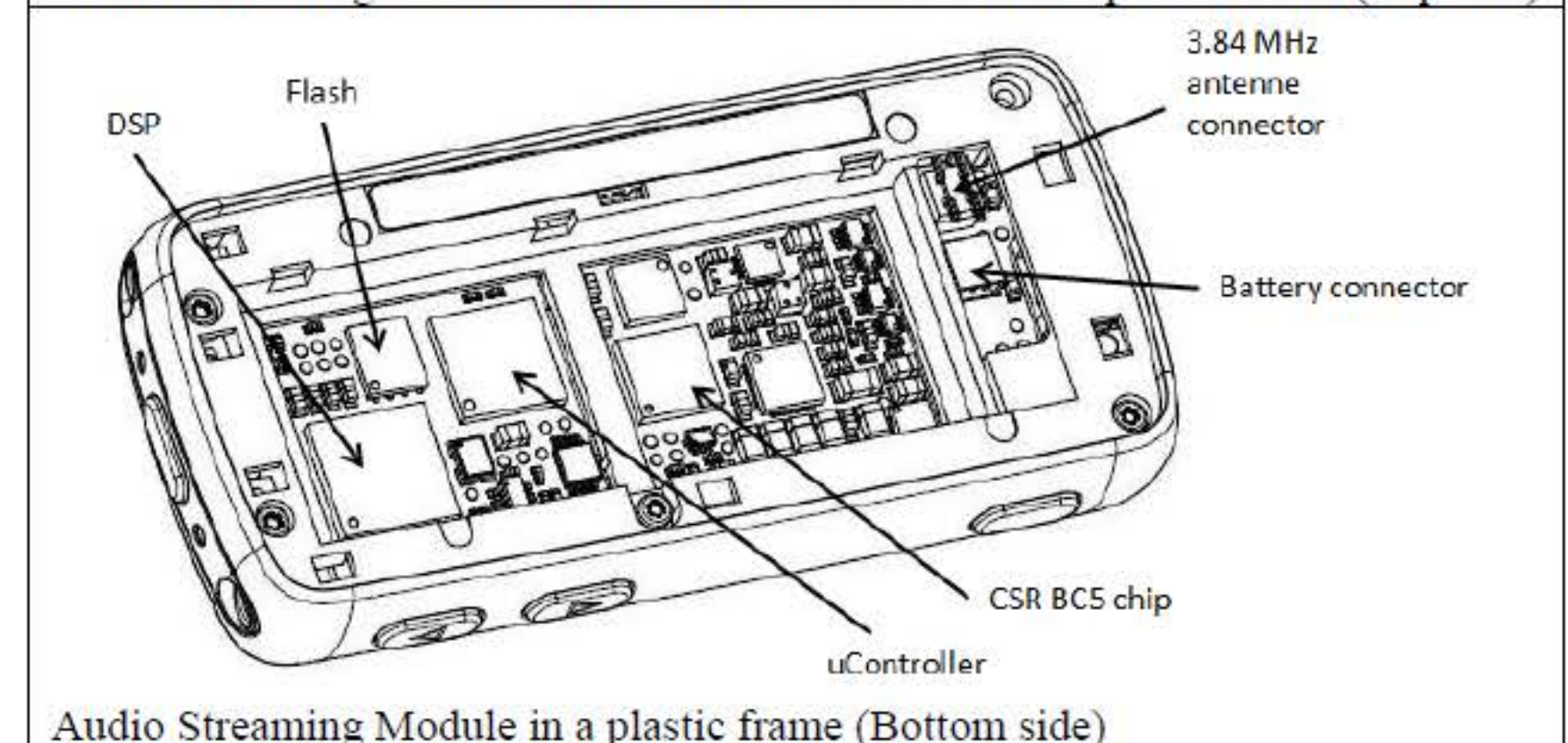
The low power, inductive radio transmitter is consisting of a Complex Programmable Logic Device (CPLD) fed with data from the host, an RC clock oscillator and two H-bridges feeding the modulated RF signal at 3.84MHz to a dedicated ferrite coil antenna (its connector can be seen in the bottom side drawing to the right). The CPLD can also transmit the RF signal via an external and dedicated neck loop antenna in stead of the internal coil antenna. (The neck loop is attached through two holes in the plastic frame to dedicated springs on the PCB, which can be seen in the top side drawing to the right).

The 2.4 GHz transceiver is consisting of a completely integrated radio transmitter and receiver inside a Bluetooth chip from Cambridge Silicon Radio (CSR). The BT chip feeds its RF signal to a dedicated PCB antenna onboard (see drawings next page). The Bluetooth chip is controlled by the  $\mu$ controller host, and audio data between the two chips is handled by the DSP.

The module mounted with its dedicated ferrite coil antenna in a plastic frame is depicted to the right:



Audio Streaming Module and its ferrite coil antenna in a plastic frame (Top side)



Audio Streaming Module in a plastic frame (Bottom side)



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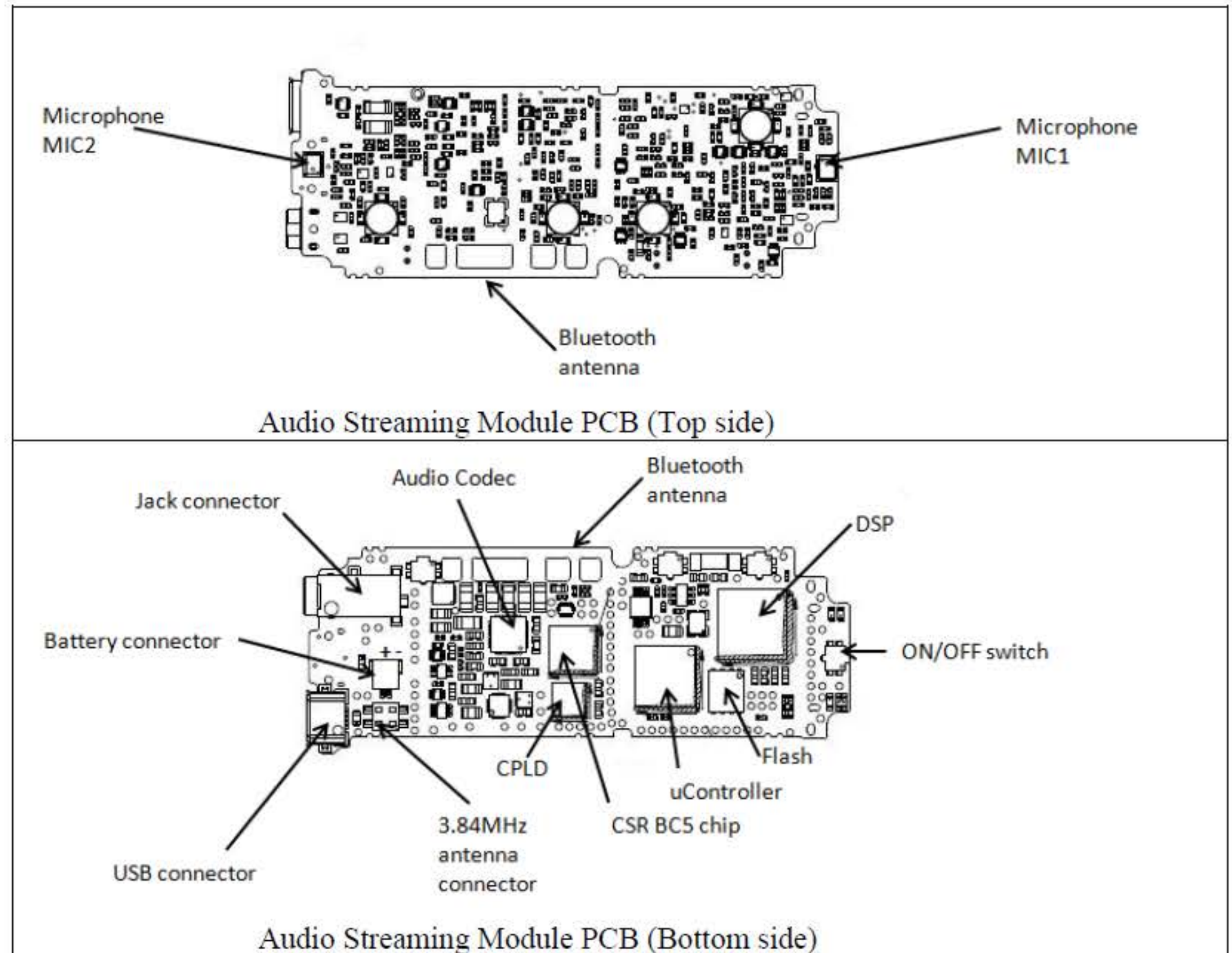
### Radio Model Name: Audio Streaming Module

The Audio Streaming Module with all its mounted components is intended to be installed as a module into Oticons wireless accessory devices, commonly referred to as the ConnectLine products (e.g. the Streamer Pro).

The module requires only a battery to be mounted together with its ferrite coil antenna in an external plastic shell (as shown on the previous page). The two microphones of the module are mounted onboard its PCB and the module requires no speaker as all sound is streamed wirelessly to any connected devices (e.g. Oticons wireless hearing aids and/or mobile phones).

The module has its power management subsystem including all voltage regulators and the charging circuit on board. Also all data interfaces (input-output) on the board are buffered.

The module PCB is depicted to the right with its main components and connections:





## **Oticon Radio Model - Regulatory Label Information for USA & Canada**

The following information will be part of the User Manual for the final product:

**Radio Model Name: Audio Streaming Module XM**

**Contains: FCC ID: U28OMSTREAMER  
IC: 1350B-OMSTREAMER**

### **NOTICE:**

This device complies with Part 15 of the FCC Rules and with RSS-210 and RSS-247 of Industry Canada.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications made to this equipment not expressly approved by Oticon A/S may void the FCC authorization to operate this equipment.

*Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.*

*L'exploitation est autorisée aux deux conditions suivantes:*

- (1) *l'appareil ne doit pas produire de brouillage, et*
- (2) *l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

## **Federal Communication Commission Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### **IMPORTANT NOTE:**

#### **Radiation Exposure Statement:**

The product comply with the US portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

This equipment should be installed and operated with minimum distance 0cm between the radiator & your body.

This is a LMA submission and the module is intended to be used inside the Oticon's device only (Model: Streamer Pro XM).