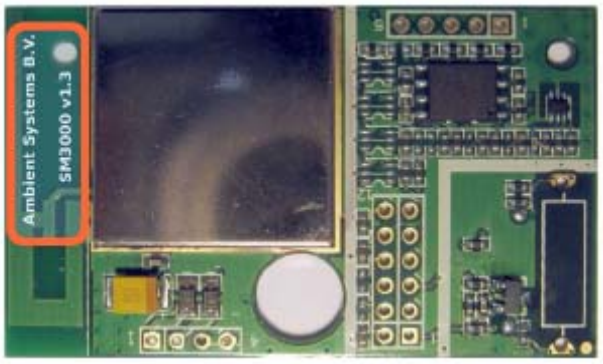
Modular Approval Requirements

Modular Approval is being requested for this device. There are eight requirements that the device must meet for full modular approval. The following paragraphs detail these requirements and the manner in which the device meets them.

The module meets all of the technical specifications applicable to the frequency band of operation.

The module has its own RF shielding.

The module has an 18 x 18 x 4mm tin-plated brass shield that covers the essential radio components. It is located near the middle of the PC-board as shown in the following photo



All modulation and data input(s) are buffered.

In an organized, periodic manner, the SM3000 processor, a sub-section of the radio chip (U1 – CC2430, samples digital data inputs introduced to the Module. Data buffering and formatting takes place within the SM3000 processor, so the actual input data amplitude or rate does not directly modulate the RF carrier and therefore cannot change the actual RF output level or emission spectrum.

The module has its own power supply regulation and local reference oscillator.

The radio chip (U1) contains internal voltage regulation to ensure RF output power and modulation remains consistent. The reference oscillator is crystal-based (X51).

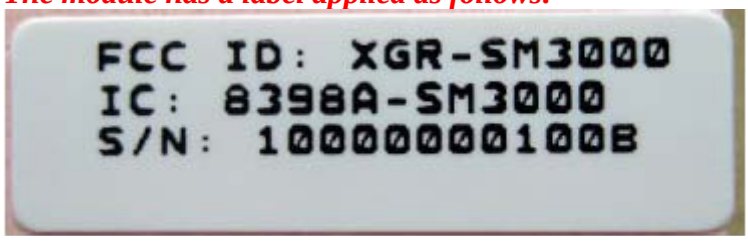
The modular transmitter must comply with the antenna requirements of Section 15.203 and 15.204(c). The certification submission contains a detailed description of the configuration of all antennas that will be used with the module.

The module has an integral antenna (pc-board trace) that cannot be modified or connected to. There is no mechanism provided for connecting an external antenna.

For Industry Canada, the module meets certification labeling requirements. Host devices that contain separately certified modules do not need to be re-certified, provided that they meet the following conditions:

- The host device, as a stand alone unit without any separately certified modules, complies with all applicable Radio Standards Specifications.
- The host device and all the separately certified modules it contains jointly meet the safety requirements of RSS-102, if applicable.
- The host device complies with the certification labeling requirements of each of the modules it contains.

The module has a label applied as follows:



Additionally, the manufacturer's name is silkscreened on the PC-board.

For the FCC, the modular transmitter must be tested in a stand-alone configuration, i.e., the module must not be inside another device during testing. This is intended to demonstrate that the module is capable of complying with Part 15 emission limits regardless of the device into which it is eventually installed. Unless the transmitter module will be battery powered, it must comply with the AC line conducted requirements found in Section 15.207.

The SM3000 Module was tested as a 'stand-alone' device for radiated spurious emissions and found to comply. Since the device is only battery powered, AC-conducted emissions tests were not applicable.

For the FCC, the modular transmitter must be labeled with its own FCC ID number, and, if the FCC ID 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.”

The device is appropriately labeled and the required information to the integrator is provided within the User Manual – SM3000 OEM Module, page 22.

The modular transmitter must comply with any applicable RF exposure requirements.

The SM3000 module conforms to the above requirement. (The Module’s output power is approximately 18 mW EIRP.)