



# LS RESEARCH, LLC

Wireless Product Development

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September 6, 2012

Re: Modular Transmitter Approval  
FCC ID: TFB-BT1

To Whom it May Concern:

The following information is being provided per the requirements of 15.212 regarding modular approval of Part 15 devices:

This transceiver is a complete RF module with an integral reference oscillator.

External connections are provided for power and data communication.

The following numbered items correspond to similarly numbered paragraphs in 15.212. Each item is a response to the requirements of that document.

1. The module has integral RF shielding to isolate it from surrounding equipment and the larger environment in general.
2. All inputs are processed as data by the on-board microcontroller. The outside user has no direct control of transmit modulation.
3. The operating range of the device is 2.2 to 4.8 VDC. The output power and frequency of module is relatively invariant to supply voltage. This is implemented by discrete and integrated voltage regulators (both linear and switching), as well as, integrated bias stabilization networks and power control loops.
4. There are two antenna options with this module, (1) Johanson 2450AT43B100 chip antenna and (2) LSR 001-0001 dipole antenna used with LSR 080-0001 U.FL to Reverse Polarity SMA cable. This is in accordance with Part 15.203.
5. The module was tested in a stand-alone configuration and found to be compliant with Part 15 regulations.
6. An FCC ID is engraved in each unit's shield at the time of manufacture. Information is also clearly presented in the user guide about labeling requirements for the final assembly.
7. This unit is compliant with Part 15.247. Installation and other requirements are presented in the user guide to allow the unit to be correctly installed.
8. The unit is compliant with the RF exposure requirements of Parts 15.247 and 2.1091.

Further information may be obtained from LS Research, LLC.

Sincerely,

William Steinike  
President, LS Research