

**Theory of Operation/Technical Description – FCC ID: VW4A091732****- RF circuit function:**

The IEEE 802.15.4 compliant transceiver inside the Atmega256RFR2 SoC generates a modulated carrier wave at 2.4000- 2.4835 GHz with 16 IEEE 802.15.4 channels. This transceiver circuit is used by system applications as a physical layer for ZigBee applications.

**- RF signal flow:**

The Transceiver IC outputs a differential RF signal- RFP & RFN which then passes through the RF path till the antenna and gets radiated or vice versa during reception

**- Description of Antenna system:**

The Balun in the RF path converts the differential RF signal into a single ended 50 ohm side where it is fed to the Antenna connector after passing through tuning elements present to ensure compliance.

**- Compliance with 15.203 antenna requirements:**

FCC 15.203 requirements for this design are tested and verified during FCC compliance testing.

**- Description of all modulation schemes used in the product:**

Module uses O-QPSK with half-sine pulse shaping.

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