Operational description of the Engine Parameter Transmitter, Model EPX-1

Description of the circuit functions, ground system and antenna of the Point Six, WOWEPX1 Wireless transmitter

The WOWEPX1 wireless engine parameter transmitter is a lithium battery backed, microprocessor based, 418 MHz. transmitter that transmits RPM, Runtime, Air Pressure, Oil Pressure, Engine temperature and a unique 30-bit serial number. The microprocessor is brought up from a power down state every 1 second by a DS2417 time of day clock interrupt output. Analog data are taken from a 12-bit ADC for both oil and air pressure. A DS18B20 digital temperature sensor is read to determine engine temperature.   The microprocessor counts the 1-second interrupt cycles from the DS2417 clock until the transmit period has expired. The microprocessor then reads the analog values from the ADC, combines it with serial number data from an onboard iButton and along with RPM counts from a second processor and total runtime hours and transmits the entire data packet serially with a Linx Technologies TXM-418-LC-R 418 MHz. Transmitter module.   The microprocessor then powers down into a quiescent state to wait for the next interrupt from the DS2417 clock.

The PC board bottom layer is a ground plane and the antenna is a 1/4-wave loop that has been hot upset into the PVC cover to form a spiral. The entire electronics is coated with a rubber conformal coating to protect it from condensation. The ground plane (bottom layer) is not coated.