



Wednesday, May 12, 2004

TUV Product Services
10040 Mesa Rim Road
San Diego, CA 92121

RE: FCC ID EZSDEI487

Dear Sir or Madam,

This letter is to address the following for the 487VPX transceivers:

1. Learn routine for replacement transmitters
2. System transmission frequency range
3. Data transmission duty cycle description
4. Manuals

1. Refer to installation guide pages 35 to 38.

2. This transmitter is a single frequency device. It has a crystal controlled PLL which generates the RF carrier. The crystal based oscillator can maintain a center frequency of 433.92MHz within a +/-35KHz tolerance. The receiver operated by this transmitter is a single band receiver tuned to 433.92MHz and only capable of receiving this frequency.

3. The 487VPX is a data transmission device. Its protocol consists of 12 preamble bits (400us each) and 66 data bits (400us or 800us each, they are random) for a total of 78 bits. So the calculation for the duty cycle becomes:

$$(12 \times 400\text{us}) + (66 \times 800\text{us}) = 57.60\text{ms within a 100ms period}$$

The worst case scenario calculation is assured by the fact that we used 800us for all 66 data bits as they can be either 400us or 800us.

4. There are no dedicated manuals for this device. The 487VPX transceiver is part of several car alarm and remote start systems. Included are the installation and owner's guides for the system with the most features which is representative of other, less feature rich systems. The owner's guide of all systems have a section covering the operation of the transceiver. Please refer to pages 5 to 12 in the owner's guide.

Sincerely,

Minas Minassian
RF Engineer