Test Report

FCC ID: M5ZEPX1

EUT: Point Six Limit Engine Parameter Transmitter, Model EPX-1

Manufactured by:

Point Six, Inc.
391 Codell Drive
Lexington, KY. 40509

Measurements According to: ANSI C63.4 (1992)

Measurement Date: May 30, 2001

Testing Performed at:

Lexmark International, Inc.
Registered Open Field Test Site
Development Lab.
740 New Circle Road, NW.
Lexington, KY. 40511-1876

Accreditation Status of Test Facility:

The Lexmark site was recognized by the Commission as meeting the requirements of section 2.948 of the FCC Rules via a letter dated August 20, 1998 and is presently on file with the Commission.

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Testing Results: (S/N 2D00000001048B97)

Harmonic	Freq. (MHz)	Meter Peak dB	Meter Average dB	Ant & Cable Factors dB/uV/m	Total Peak dB/uV/m	Limit Peak dB/uV/m	Total Average dB/uV/m	Limit Average dB/uV/m
1	418(V)	69.50*	-	19.28	88.78	92.78	-	72.30
2	836(V)	10.00 **QP**	-	25.16	35.16 **QP**	46.00 **QP**	-	-
3	1254(V)	15.67	-2.19	24.60	40.27	74.00	22.41	54.00
4	1672(V)	14.19	-1.72	26.50	40.69	74.00	24.78	54.00
5	2090(V)	23.97	-1.26	28.10	52.07	74.00	26.84	54.00
6	2508(V)	11.85	-2.18	29.80	41.65	74.00	27.62	54.00
7	2926(V)	12.03	-1.60	31.50	43.53	74.00	29.90	54.00
8	3344(V)	12.06	-1.69	31.90	43.96	74.00	30.21	54.00
9	3762(H)	14.30	-2.13	32.40	46.70	74.00	30.27	54.00
10	4180(V)	11.10	-1.91	32.90	44.00	74.00	30.99	54.00

* Indicates max. radiation orientation; the product was measured at three different orientations.

Sample Calculation:

From FCC Rules, Paragraph 15.231(e)

Frequency: 260-470 MHz.
Amplitude: 1500-5000 uV/m

For 418 MHz. L(limit)=((418-260)/(470-260))(5000-1500)+1500

L = 4133 uV/m

L(dB/uV/m) = 20 Log (4133)

L = 72.3 dB/uV/m (AVG)

L(Peak) = Avg. + 20 dB

L(Peak) = 72.3 + 20 = 92.3 dB/uV/m

Signed:_____Date:_____
D.R. Bush, PE, NCE, President dBi Corporation

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The photo below indicates that the 20 dB transmitted bandwidth of the Point Six Engine Parameter Transmitter is 46 kHz. This is well within the maximum bandwidth specified by 47CFR15.233(c).

Point Six Inc.
391 Codell Drive
Lexington KY 40509

Gentlemen:

On Thursday, August 2, Jim Factor of Point Six and I performed the measurements required in 47CFR15.31(e) on the Point Six EPX, Engine Parameter Transmitter.

The instrumentation used included a Hewlett-Packard model 8568B spectrum analyzer, an EMCO loop antenna model 7405-902, and a Hewlett-Packard model 6114A precision adjustable power supply.

The loop antenna was securely fixed near the EPX and the following relative measurements of the 418 MHz output power were taken:

12.0 volts	7.00 dBm (ref)
10.2 volts	7.00 dBm
13.8 volts	6.80 dBm

As can be seen from these measurements, the 418 MHz output power varies insignificantly with power supply voltage variation.

Please feel free to contact me if there are any questions concerning these measurements.

Very truly yours,

Donald R. Bush, PE, NCE

Point Six, Inc.

391 Codell Drive
Lexington, KY 40509
859-266-3606 Fax 266-0702

The cable assembly used to test the EPX-1 was made up of three sets of four conductor cat 5 cable , and one three conductor 24 gauge cable . All cables were 3 meters long and were in one meter bundles . the board has ferrites on all inputs.

Point Six , Inc.

Signed:_____
_____Date:_____

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To Whom It May Concern:

The Point Six, Inc. wireless engine parameter transmitter (model EPX-1) transmits a 15-16 millisecond packet once each 600-10 seconds. This is identical to the data packet timing of a previously certified “M5ZWOW”. I will restate this timing below.

The packet consists of transmitter-on/transmitter-off timing that represents the serial number and humidity/temperature data. The duty cycle is approximately 50%. The packet time can vary with serial number between 14-16 milliseconds. The packet data is controlled by a microprocessor whose timing is based on a ceramic resonator that is very stable. The packet below (figure #2) illustrates a typical data packet, the worst case, 16 milliseconds, cannot be shown because serial number would have to be forced to make this so. Figure #1 illustrates the overall timing; a packet is sent each 10 seconds in this worst case.

The battery used during the tests was new and was a standard 3.6 Volt Lithium cell. The battery is a 3.6 Volt Lithium chemistry, which has a flat discharge curve from new to about 90% used. In this application the battery requires about 5 years to discharge to the point that it cannot be used. The battery was used for no other purpose and had operated in the test unit for only a short time when the test was performed.

The label will be Flexcon 2 mil PM200S mylar with a Flexcon 1 mil PM100C Polyester laminate.

John I. Compton
President, Point Six, inc.

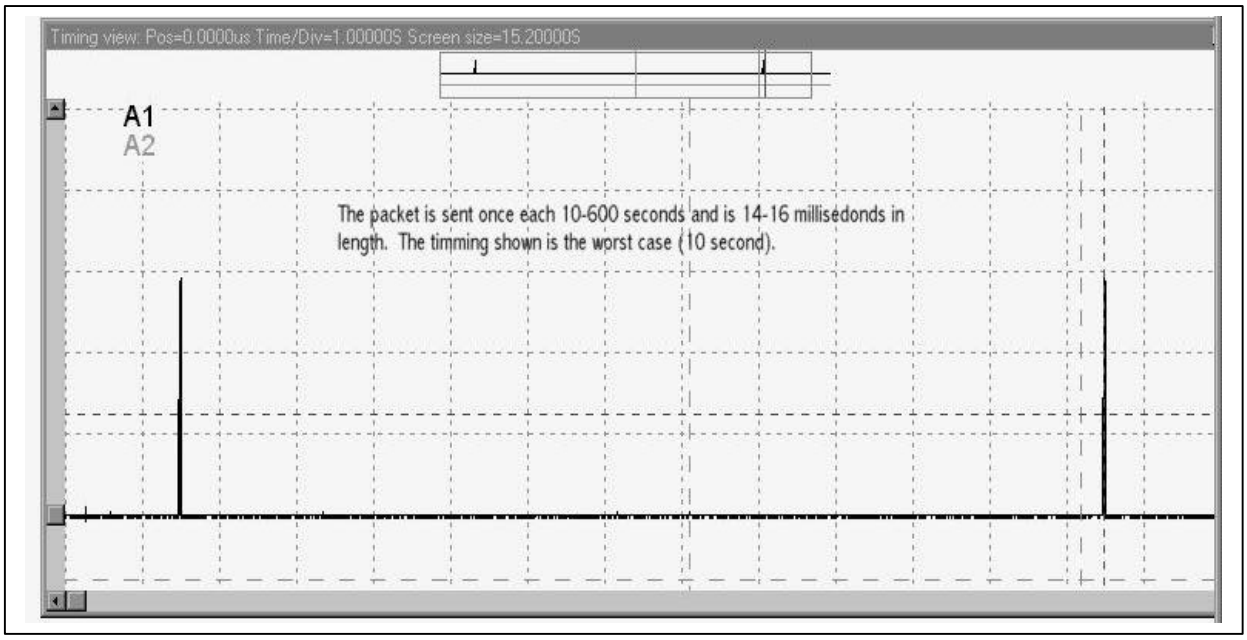

Figure #1 Overall timing

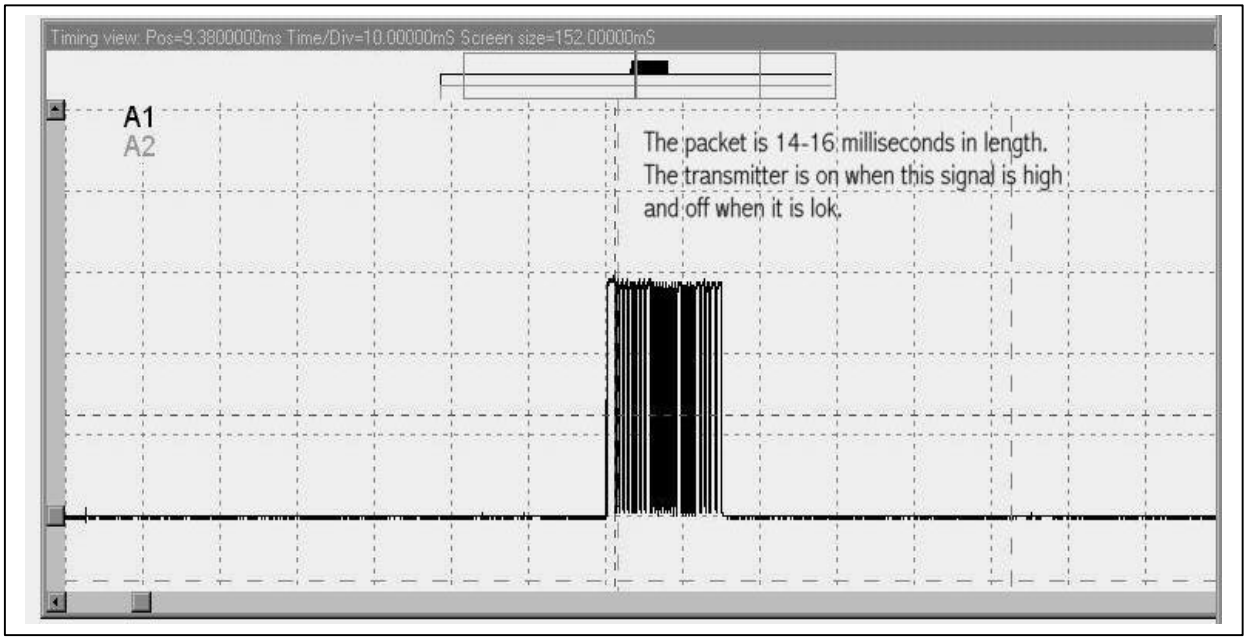

Figure #2 Packet Timing