

2. EXPLOSIVE ATMOSPHERE TEST

2.1 // UNIT UNDER TEST OVERVIEW

Test Dates	22/02/2017
Customer	GM Afcon
Customer Rep.	Gili Malek
Unit Name	V-Alert
P/N	N.A
S/N	N.A
Item Manufacturer	GM Afcon
Number of Units	1

2.2 // TEST DESCRIPTION

2.2.1 // TEST PROCEDURE

1. The UUT was placed in the test chamber, one thermocouple was attached to the UUT and one thermocouple was attached to the chamber wall.
2. The UUT was switched on and a functional test has been performed. Then the UUT was switched off.
3. The test chamber was sealed. The temperatures of the inside wall and the UUT have been adjusted to the high operating temperature of the test item ($+40^{\circ}\text{C} \pm 2^{\circ}\text{C}$).
4. The chamber air pressure was adjusted to simulate altitude of 16600ft to allow introducing, vaporizing and mixing of the fuel-air mixture.
5. 22 ml of N-Hexane were injected into the test chamber. The test atmosphere was circulated for 4 min. to allow the complete vaporization of the fuel.
6. At simulated altitude of 13300ft the explosiveness of the fuel-air mixture was verified using the spark gap device in the sampling tube and then the sampling tube was purged.
7. The UUT has been operated from this step until completion of Step 8 switching on/off the power as frequently and reasonably as possible.
8. The simulated altitude was decreased to 6700ft with rate of no more than 100 meter/min. and the potential explosiveness of the fuel-air mixture was performed. Then the sampling tube was purged.
9. The chamber air pressure was adjusted to simulate altitude of 6600ft to allow introducing, vaporizing and mixing of the fuel-air mixture.
10. 35 ml of N-Hexane were injected into the test chamber. The test atmosphere was circulated for 4 min. to allow the complete vaporization of the fuel.
11. At simulated altitude of 3300ft the explosiveness of the fuel-air mixture was verified using the spark gap device in the sampling tube and then the sampling tube was purged.
12. The UUT has been operated from this step until completion of Step 13 switching on/off the power as frequently and reasonably possible.

13. The simulated altitude was decreased to 0ft with rate of no more than 100 meter/min. and the potential explosiveness of the fuel-air mixture was performed. Then the sampling tube was purged.
14. The UUT was removed from the test chamber and a functional test was performed.

// Fuel Amount Calculation

Altitude	N-hexane volume
10,000 ft	22 ml.
0 ft	35 ml.

2.2.2 // EXCLUSIONS FROM THE TEST METHOD

Not Applicable.

2.2.3 // TEST INSPECTION

	Visual Test	Functional Test
Before Test	✓	✓
During Test	✗	✓
After Test	✓	✓

All inspections were performed by customer's representative.

2.3 // TEST RESULTS

During the test, **No Sudden Changes** in pressure and temperature measurements observed, Also, In visual inspection at completion of the test, no external damage observed.

We can therefore conclude that **there was NO EXPLOSION.**

The UUT functioned successfully during the explosive atmosphere test **without causing any ignition.**

Test Result: ✓Pass