Annexure – I

1.0 Dry Heat / High Temperature Test as per IS: 9000 Part 3 section 5:

1.1 Test Conditions:

ICAT Sample I.D	ICAT/AEEL/56955/01
DUT Operation During Test	Powered ON Mode
Voltage Supplied After Test	12V

1.2 Test Specifications:

The test shall be carried out in accordance with Indian Standard IS: 9000 (Part 3/Sec 5) the device shall be subjected to temperature of 70 ± 2°C for 16 h in high temperature. Test with device in working condition. The recovery period shall be 2 h.

1.3 Acceptance Criteria:

Device during and after the high temperature test the VLT with Emergency Button shall be tested for the connectivity to server and its capability to send two location messages.

1.4 Observations and Result:

Observation:
After test DUT was visually, functionally and mechanically inspected, no abnormality observed.
Result:
Before Test:
Emergency String:
$Header,iTriangle,EMR,861693034634147,NM,19122017104943,A,28.359272,N,76.927963,E,242.0,0.0,5,G,KA0
1I2000,+9164061023*44
PVT Data String:
$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034634147,KA01I2000,1,19122017,104923,28.359289
,N,76.927963,E,0.0,171,12,242.0,1.29,1.01,AirTel,1,1,11.9,4.0,1,C,25,404,10,0209,6d17,28,aa1a,0209,26,4333,0
209,18,d2fb,0209,17,b2f8,0209,0001,00,087752,0.0,0.0,0,()*76
During Test:
Emergency String:
$Header,iTriangle,EMR,861693034634147,NM,20122017041925,V,0.000000,N,0.000000,E,0.0,0.0,0,G,KA01I20
00,+9164061023*5B
PVT Data String:
$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034634147,KA01I2000,0,20122017,041904,0.000000,
N,0.000000,E,0.0,0,0,0.0,0.00,0.00,AirTel,1,1,11.9,4.1,1,C,15,404,10,0209,6d17,19,4333,0209,10,b2fa,0209,07,
6d16,0209,19,ffff,0000,0001,00,088343,0.0,0.0,0,()*4E

Prepared By		Checked By	
Sonia (signature)		*(signature)*	Page 5 of 65 + Drwg (03Nos.) [56955]
SONIA NAIN Assistant Manager		MADHUSUDAN JOSHI Deputy General Manager	

Annexure – I (Continued)

After Test:

Emergency String:

$Header,iTriangle,EMR,861693034634147,NM,20122017044044,A,28.359318,N,76.927780,E,228.0,0.0,0,G,KA01 I2000,+9164061023*42

PVT Data String:

$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034634147,KA01I2000,1,20122017,044035,28.359318, N,76.927780,E,0.0,61,9,228.0,1.31,0.95,AirTel,1,1,11.9,4.0,1,C,23,404,10,0209,6d17,27,4333,0209,25,9cf1,0209, 24,b2fa,0209,24,6d18,0209,0001,00,088428,0.0,0.0,0,()*77

Satisfactory.

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SONIA NAIN Assistant Manager		MADHUSUDAN JOSHI Deputy General Manager	Page 6 of 65 + Drwg (03Nos.) [56955]

Annexure – II

2.0 Cold Test as per IS: 9000 Part 2 section 4 – 1977:

2.1 Test Conditions:

ICAT Sample I.D	ICAT/AEEL/56955/01
DUT Operation During Test	Powered ON Mode
Voltage Supplied After Test	12V

2.2 Test Specifications:

The test shall be carried out in accordance with IS 9000 (Part 2/Sec 4 - 1977). The device under test shall be subjected to temperature of −10 ± 2°C for 2 h with device in working condition. The recovery period shall be 2 h.

2.3 Acceptance Criteria:

Device during and after the cold test, the VLT with Emergency Button shall be tested for the connectivity to server and its capability to send two location messages.

2.4 Observations and Result:

Observation:
After test DUT was visually, functionally and mechanically inspected no abnormality observed.
Result:
Before Test:
Emergency Data:
$Header,iTriangle,EMR,861693034634147,NM,20122017044044,A,28.359318,N,76.927780,E,228.0,0.0,0,G,KA01I2000,+9164061023*42
PVT Data:
$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034634147,KA01I2000,1,20122017,044035,28.359318,N,76.927780,E,0.0,61,9,228.0,1.31,0.95,AirTel,1,1,11.9,4.0,1,C,23,404,10,0209,6d17,27,4333,0209,25,9cf1,0209,24,b2fa,0209,24,6d18,0209,0001,00,088428,0.0,0.0,0,()*77
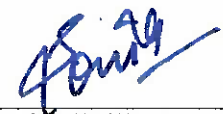**During Test:**
Emergency Data:
$Header,iTriangle,EMR,861693034634147,NM,20122017061034,V,0.000000,N,0.000000,E,0.0,0.0,0,G,KA01I2000,+9164061023*50
PVT Data:
$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034634147,KA01I2000,0,20122017,061014,0.000000,N,0.000000,E,0.0,0,0,0.0,0.00,0.00,AirTel,1,1,11.8,4.0,1,C,12,404,10,0209,6d17,20,b2f8,0209,11,d2fc,0209,19,ffff,0000,18,ffff,0000,0001,00,088903,0.0,0.0,0,()*1B

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After Test:

Emergency Data:

$Header,iTriangle,EMR,861693034634147,NM,20122017075616,A,28.358576,N,76.927795,E,225.0,0.0,1,G,KA01I2000,+9164061023*46

PVT Data:

$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034634147,KA01I2000,1,20122017,075532,28.358578,N,76.927788,E,0.0,188,10,226.0,1.88,1.65,AirTel,1,1,11.8,4.0,1,C,18,404,10,0209,6d17,30,d2fc,0209,28,6d18,0209,23,b2f8,0209,23,4333,0209,0001,00,089367,0.0,0.0,0,()*28

Satisfactory.

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signature	*ICAT stamp*	*signature*	Page 8 of 65 + Drwg (03Nos.) [56955]
SONIA NAIN Assistant Manager		**MADHUSUDAN JOSHI** Deputy General Manager	

Annexure – III

3.0 Temperature Shock Test as per AIS 140 Cl. No. 6.3.3 (Sr. No. 4):

3.1 Test Conditions:

ICAT Sample I.D	ICAT/AEEL/56955/05
DUT Operation During Test	Non-Operating Mode
Voltage Supplied After Test	12V

3.2 Test Specifications:

High Temperature: +70±2 °C
Low Temperature: -10±2 °C
Exposure time would be 3 hours/cycle (i.e. 1.5 hrs each temperature)
Number of cycles:2

3.3 Acceptance Criteria:

After the test the VLT with Emergency Button shall be tested for the connectivity to server and its capability to send two location messages.

3.4 Observations and Result:

Observation:
After test DUT was visually, functionally and mechanically inspected no abnormality observed.
Result:
Before Test:
Emergency Data:
$Header,iTriangle,EMR,861693034634386,NM,27122017084844,A,28.358870,N,76.927979,E,255.0,0.0,0,G,KA01KA1134,+917406466262*0D
PVT Data:
$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034634386,KA01KA1134,1,27122017,084833,28.358870,N,76.927979,E,0.0,180,17,255.0,1.20,0.61,AirTel,1,1,11.7,4.0,1,C,23,404,10,0209,6d18,32,6d17,0209,25,b2f8,0209,21,4333,0209,20,6e9d,0209,0001,00,000126,0.0,0.0,0,()*57

After Test:
Emergency Data:
$Header,iTriangle,EMR,861693034634386,NM,28122017042216,A,28.359207,N,76.928032,E,248.0,0.0,0,G,KA01KA1134,+917406466262*0B
PVT Data:
$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034634386,KA01KA1134,1,28122017,042212,28.359205,N,76.928032,E,0.0,354,13,248.0,1.79,0.85,AirTel,1,1,11.5,4.0,1,C,24,404,10,0209,6d17,25,d2fc,0209,25,d2fb,0209,23,b2f8,0209,17,b2fa,0209,0001,00,000420,0.0,0.0,0,()*66
Satisfactory.

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signature	*signature*	Page 9 of 65 + Drwg (03Nos.) [56955]
SONIA NAIN Assistant Manager	MADHUSUDAN JOSHI Deputy General Manager	

Annexure – IV

4.0 Damp Heat Cycle Test as per IS 9000 Part 5 Section 2 - 1981:

4.1 Test Conditions:

ICAT Sample I.D	ICAT/AEEL/56955/04
DUT Operation During Test	Powered ON Mode
Voltage Supplied After Test	12V

4.2 Test Method & Specifications

The device under test shall be tested according to IS 9000 (Part 5/Sec 2 - 1981). The test is carried out at +25° to +55° C, Humidity 95%. Six cycles (each test cycle of 24 h) shall be run with device in off condition. Functional test shall be carried out with power in 'On condition' at start of 2nd, 4th and 6th cycle.

4.3 Acceptance Criteria:

Device during and after the test the VLT with Emergency Button shall be tested for the connectivity to server and its capability to send two location messages.

4.4 Observation and Results:

Observation:
After test DUT was visually, functionally and mechanically inspected no abnormality observed.
Result:
Before Test:
Emergency IP Data:
$Header,iTriangle,EMR,861693034634170,NM,19122017065624,A,28.359198,N,76.927849,E,219.0,0.0,2,G,KA01I2000,+917406466262*4C
PVT IP Data:
$Header,iTriangle,1_37T02B0164MAIS,EA,10,L,861693034634170,KA01I2000,1,19122017,065620,28.359215,N,76.927841,E,0.0,106,10,219.0,1.22,0.95,AirTel,1,1,11.8,4.0,1,C,25,404,10,0209,4333,41,6d17,0209,29,6d18,0209,25,d2fc,0209,25,aa1a,0209,0001,00,000529,0.0,0.0,0,()*44

During Test:
Emergency IP Data:
$Header,iTriangle,EMR,861693034634170,NM,20122017085209,A,28.358698,N,76.928085,E,247.0,0.0,0,G,KA01I2000,+917406466262*4B
PVT IP Data:
$Header,iTriangle,1_37T02B0164MAIS,EA,10,L,861693034634170,KA01I2000,1,20122017,085207,28.358685,N,76.928085,E,0.0,356,10,247.0,1.81,1.07,AirTel,0,1,11.6,4.0,1,C,30,404,10,0209,6d17,31,4333,0209,26,6d18,0209,26,b2f8,0209,24,6e9d,0209,0000,00,002730,0.0,0.0,0,()*46

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After Test:

Emergency IP Data:

$Header,iTriangle,EMR,861693034634170,NM,26122017045008,A,28.359047,N,76.928009,E,239.0,0.0,0,G,KA01I2000,+917406466262*4A

PVT IP Data:

$Header,iTriangle,1_37T02B0164MAIS,EA,10,L,861693034634170,KA01I2000,1,26122017,044920,28.359045,N,76.928009,E,0.0,182,13,240.0,1.10,0.76,AirTel,1,1,11.6,4.0,1,C,23,404,10,0209,6d17,23,d2fc,0209,23,aa1a,0209,15,b2f8,0209,13,d2fb,0209,0001,00,002830,0.0,0.0,0,()*5A

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Assistant Manager		Deputy General Manager	

Annexure – V

5.0 Salt Spray Test as per Clause 4.8 of IS 10250:

5.1 Test Conditions:

ICAT Sample I.D	ICAT/AEEL/56955/05
DUT Operation During Test	Non-Operating Mode

5.2 Test Method, Specifications:

Solution: 5%NACL
Temperature: 35±3°C
Test Duration: 96 Hrs

5.3 Acceptance Criteria:

The VLT with Emergency Button shall be tested for the connectivity to server and its capability to send two location messages.

5.4 Observation and Result:

Observation:
After test DUT was visually, functionally and mechanically inspected no abnormality observed. No corrosion observed.

Result:

Before Test:

Emergency IP Data:
$Header,iTriangle,EMR,861693034634386,NM,19122017092142,A,28.359241,N,76.927910,E,234.0,0.0,3,G,KA01KA1134,+917406466262*74

PVT IP Data:
$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034634386,KA01KA1134,1,19122017,092112,28.359200,N,76.927971,E,0.0,98,9,233.0,1.25,0.91,AirTel,1,1,11.9,4.0,1,C,22,404,10,0209,6d17,21,4333,0209,18,aa1a,0209,17,b2fa,0209,14,6d18,0209,0001,00,009871,0.0,0.0,7,()*67

After Test:

Emergency IP Data:
$Header,iTriangle,EMR,861693034634386,NM,26122017043028,A,28.358980,N,76.928001,E,237.0,0.0,0,G,KA01KA1134,+917406466262*06

PVT IP Data:
$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034634386,KA01KA1134,1,26122017,043018,28.358965,N,76.928001,E,0.0,332,13,237.0,1.16,0.77,AirTel,0,1,11.7,4.0,1,C,18,404,10,0209,6d17,29,6d18,0209,27,aa1a,0209,27,d2fc,0209,21,b2f8,0209,0000,00,012096,0.0,0.0,0,()*67

Satisfactory.

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[signature]		*[signature]*	Page 12 of 65 + Drwg (03Nos.) [56955]
SONIA NAIN Assistant Manager		MADHUSUDAN JOSHI Deputy General Manager	

Annexure – VI

6.0 High Voltage Test as per ISO 16750 - 2: 2010:

6.1 Test Conditions:

ICAT Sample I.D	ICAT/AEEL/56955/03
DUT Operation During Test	Powered ON Mode
Voltage Supplied Before & After Test	12V

6.2 Test Specifications:

The test is conducted to ensure service life requirements & functionality. The device under test shall be operated for 60 minutes at 18 V for 12 V systems & 36 V for 24 V systems.

6.3 Acceptance Criteria:

The VLT with Emergency Button shall be tested during and after the test for the connectivity to server and its capability to send two location messages.

6.4 Observations and Result:

Observation:
After test DUT was visually, functionally and mechanically inspected, no abnormality observed.
Result:

   a.)   High Voltage for 12V system at 18V.

Before Test:
Emergency IP Data:
$Header,iTriangle,EMR,861693034637124,NM,20122017091331,A,28.358845,N,76.928108,E,177.0,0.0,17,G,KA01I2000,+917406466262*7A
PVT IP Data:
$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034637124,KA01I2000,1,20122017,091311,28.359276,N,76.927879,E,0.0,18,5,176.0,4.81,3.96,AirTel,1,1,11.9,4.0,1,C,20,404,10,0209,6d17,32,4333,0209,26,6d18,0209,24,d2fc,0209,24,b2f8,0209,0001,00,023464,0.0,0.0,13,()*40

During Test:
PVT IP Data:
$Header,iTriangle,1_36T02B0164MAIS_6,NR,2,H,861693034637124,KA01I2000,1,20122017,100541,28.359640,N,76.927345,E,0.0,235,4,241.0,2.84,2.67,AirTel,1,1,17.4,4.0,0,C,20,404,10,0209,6d17,25,4333,0209,21,6d18,0209,20,d2fc,0209,18,aa1a,0209,0001,00,023792,0.0,0.0,1,()*30

After Test:
Emergency IP Data:
$Header,iTriangle,EMR,861693034637124,NM,20122017102418,A,28.358913,N,76.928101,E,248.0,0.0,4,G,KA01I2000,+917406466262*4B
PVT IP Data:
$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034637124,KA01I2000,1,20122017,102414,28.358917,N,76.928123,E,0.0,99,7,248.0,1.52,1.27,AirTel,1,1,17.4,4.0,1,C,20,404,10,0209,6d17,26,4333,0209,20,d2fc,0209,19,6

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e9d,0209,17,6d16,0209,0001,00,023916,0.0,0.0,1,()*62

b.) High Voltage For 24V system at 36V.

Before Test:

Emergency IP Data:

$Header,iTriangle,EMR,861693034637124,NM,20122017102418,A,28.358913,N,76.928101,E,248.0,0.0,4,G,KA01I2000,+917406466262*4B

PVT IP Data:

$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034637124,KA01I2000,1,20122017,102414,28.358917,N,76.928123,E,0.0,99,7,248.0,1.52,1.27,AirTel,1,1,17.4,4.0,1,C,20,404,10,0209,6d17,26,4333,0209,20,d2fc,0209,19,6e9d,0209,17,6d16,0209,0001,00,023916,0.0,0.0,1,()*62

During Test:

Emergency IP Data:

$Header,iTriangle,EMR,861693034637124,NM,20122017104944,A,28.359324,N,76.927628,E,292.0,0.0,7,G,KA01I2000,+917406466262*79

PVT IP Data:

$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034637124,KA01I2000,1,20122017,104930,28.359272,N,76.927696,E,0.0,306,3,292.0,99.99,99.99,AirTel,1,1,0.0,4.0,1,C,21,404,10,0209,6d17,28,6d18,0209,23,aa1a,0209,23,d2fb,0209,22,6e9d,0209,0001,00,024082,0.0,0.0,1,()*23

After Test:

Emergency IP Data:

$Header,iTriangle,EMR,861693034637124,NM,20122017112958,A,28.359457,N,76.927895,E,277.0,0.0,3,G,KA01I2000,+917406466262*4F

PVT IP Data:

$Header,iTriangle,1_36T02B0164MAIS_6,EA,10,L,861693034637124,KA01I2000,1,20122017,112955,28.359446,N,76.927933,E,0.0,355,4,277.0,3.39,2.86,AirTel,1,1,0.0,4.0,1,C,22,404,10,0209,6d17,34,6d18,0209,27,aa1a,0209,24,d2fb,0209,24,d2fc,0209,0001,00,024339,0.0,0.0,11,()*09

Satisfactory.

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Annexure – VII

7.0 Shock Test as per standard IS: 9000 (Part 7-2006):

7.1 Test Conditions:

ICAT Sample I.D	ICAT/AEEL/56955/04
DUT Operation During Test	Non-Operating Mode

7.2 Test Method and Specifications:

Impact test carried out as per IS 9000 Part 7.
Severity level=15g
Impact duration =11 ms
Impact type= Half sine
Number of impact=9 (3 on each axis)

7.3 Acceptance Criteria:

After the shock test, the VLT with Emergency Button shall be tested for the connectivity to server and its capability to send two location messages.

7.4 Observation and Results:

Observations:

No deformation, crack, looseness or any other harmful defect observed on the DUT(s) after the test.
DUT was functionally OK in operation after the test.

Results:

Before Test:

Emergency IP Data:

$Header,iTriangle,EMR,861693034634170,NM,26122017105619,A,28.359192,N,76.928047,E,246.0,0.0,0,G,KA01I2000,+917406466262*42

PVT IP Data:

$Header,iTriangle,1_37T02B0164MAIS,EA,10,L,861693034634170,KA01I2000,1,26122017,105612,28.359167,N,76.928047,E,0.0,56,12,246.0,1.11,0.84,AirTel,0,1,11.6,4.0,1,C,22,404,10,0209,6d17,27,aa1a,0209,26,d2fc,0209,23,6d18,0209,18,d2fb,0209,0000,00,003126,0.0,0.0,0,()*26

After Test:

Emergency IP Data:

$Header,iTriangle,EMR,861693034634170,NM,26122017115956,A,28.358883,N,76.928055,E,241.0,0.0,0,G,KA01I2000,+917406466262*4B

PVT IP Data:

$Header,iTriangle,1_37T02B0164MAIS,EA,10,L,861693034634170,KA01I2000,1,26122017,115947,28.358885,N,76.928047,E,0.0,137,13,241.0,1.05,0.74,AirTel,0,1,11.6,4.0,1,C,23,404,10,0209,6d17,36,aa1a,0209,32,d2fc,0209,28,6d18,0209,28,d2fb,0209,0000,00,003197,0.0,0.0,0,()*10

Satisfactory.

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Annexure – VIII

8.0 Vibration Test as per of IS: 9000 (Part8-1981):

8.1 Test Conditions:

ICAT Sample I.D	ICAT/AEEL/56955/04
DUT Operation During Test	Non-Operating Mode

8.2 Test Method and Test Specifications:

Frequency	10Hz – 55Hz – 10Hz
Displacement	1.5 mm
Duration	3 Hours (1 Hours on each axis)

8.3 Acceptance Criteria:

During and after the test the VLT with Emergency Button shall be tested for the connectivity to server and its capability to send two location messages.

8.4 Test Observations /Result:

Observations:
No deformation, crack, looseness or any other harmful defect observed on the DUT(s) after the test.
DUT was functionally OK in operation after the test.
Results:
Before Test:
Emergency IP Data:
$Header,iTriangle,EMR,861693034634170,NM,26122017045008,A,28.359047,N,76.928009,E,239.0,0.0,0,G,KA01I2000,+917406466262*4A
PVT IP Data:
$Header,iTriangle,1_37T02B0164MAIS,EA,10,L,861693034634170,KA01I2000,1,26122017,044920,28.359045,N,76.928009,E,0.0,182,13,240.0,1.10,0.76,AirTel,1,1,11.6,4,0,1,C,23,404,10,0209,6d17,23,d2fc,0209,23,aa1a,0209,15,b2f8,0209,13,d2fb,0209,0001,00,002830,0.0,0.0,0,()*5A
After Test:
Emergency IP Data:
$Header,iTriangle,EMR,861693034634170,NM,26122017105619,A,28.359192,N,76.928047,E,246.0,0.0,0,G,KA01I2000,+917406466262*42
PVT IP Data:
$Header,iTriangle,1_37T02B0164MAIS,EA,10,L,861693034634170,KA01I2000,1,26122017,105612,28.359167,N,76.928047,E,0.0,56,12,246.0,1.11,0.84,AirTel,0,1,11.6,4.0,1,C,22,404,10,0209,6d17,27,aa1a,0209,26,d2fc,0209,23,6d18,0209,18,d2fb,0209,0000,00,003126,0.0,0.0,0,()*26
Satisfactory

Prepared By		Checked By	
SONIA NAIN Assistant Manager		MADHUSUDAN JOSHI Deputy General Manager	Page 16 of 65 + Drwg (03Nos.) [56955]