

INTERNATIONAL CENTRE FOR AUTOMOTIVE TECHNOLOGY

[A Division of NATRIP Implementation Society (NATIS), Govt. of India]

Non-Transferable

TEST REPORT

C T O G N 0 0 3 5

Date: 31.01.2018

- 1.0 NAME AND ADDRESS OF THE CUSTOMER : M/s iTriangle Infotech Pvt. Ltd.
803/A (803/A-1-3), 76th 'A' Cross, West of Chord Road, 6th Block Rajaji Nagar, Bengaluru, Karnataka-560010
- 2.0 CUSTOMER REFERENCE : CCDITRIMDEEG56955 dated 28-Dec-2017
- 3.0 DESCRIPTION OF DEVICE UNDER TEST (DUT) :

VTS (Vehicle Tracking System)	Emergency Button
Model No: aQuila BHARAT101	Model No: aQuila SOS
Part No: ITR-BH-0019	Part No: ITR-PB-0023
Assembly Drawing No. : ITR000-10_128_G2.2	
B.O.M. (Bill of Material): ITR000-10_128_B2.2	
Schematic No.: ITR000-10_128_S2.2	
GSM/GPRS Module: SIM800	
GNSS Module: Quectel L-86	
Accelerometer & Gyroscope Module: LSM6DSL	
Voltage System: 12V & 24V	



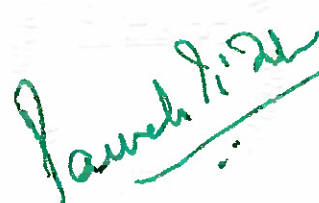
- 4.0 TEST OBJECTIVE :
To carry out the tests as mentioned in Sr. No. 8.0 on the DUT mentioned in Sr. No. 3.0 above as per AIS 140 as amended up to December-2017.
- 5.0 TEST OBSERVATION: Innovation • Service • Excellence
Test observations/results & photographs are mentioned in Annexure – I to XXIX of this test report.
- 6.0 CONCLUSION:
DUT as mentioned in Sr. No. 3.0 above *meets* all the Test requirements as per AIS 140 as amended up to December 2017.


Note: This report supersedes Report No. CT0GN0033 Dated 30.01.2018

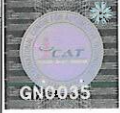
Note: For Electromagnetic Compatibility Tests as per Cl. No. 6.3.2 (4) & Load dump test as per Cl. No. 6.3.2 (12) of AIS 140 refers to Report No. CDOMN0026 dated 31-01-2018.

Disclaimer

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Prepared By	Checked By	Approved By
 SONIA NAIN Assistant Manager	 MADHUSUDAN JOSHI Deputy General Manager	 PAMELA TIKKU Sr. General Manager



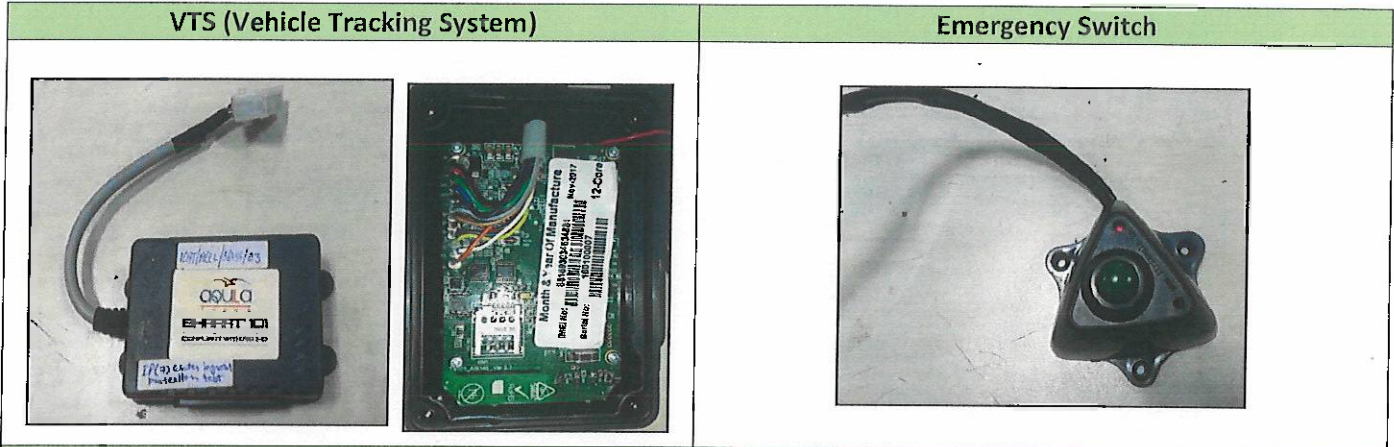

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Office Address (Unit 2): Plot No. 1, Sector M-11, HSIIDC, IMT Manesar, Gurugram-122050, Haryana (India).

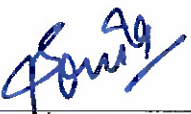

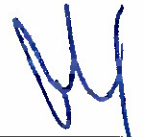
Phone : +91 124 6682000, E-mail : team@icat.in, Website: www.icat.in

(Scope wise NABL Accredited and BIS recognised Test Laboratory)

7.0 DUT Description:



System Details		
1	Connector Used	No connector used
2	Connector used for antenna	No connector used since it is internal patch antenna
3	Main GSM antenna	In house designed On-board antenna
4	GPS antenna	Quectel
5	WLAN antenna	NA
6	System Software	Windows
7	Make	Microsoft
8	Version	Windows 7 , Windows10
9	Operating system details with version	Nucleus
10	Communication Protocol Used	TCP/IP, As per AIS140 guidelines
11	Vehicle to center	TCP/IP, As per AIS140 guidelines
12	VLT to control center	TCP/IP, As per AIS140 guidelines
13	Command set for configurations	Available
14	Description of device	aQuila BHARAT101 Vehicle Tracking and Monitoring Unit

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 SONIA NAIN Assistant Manager		 MADHUSUDAN JOSHI Deputy General Manager	Page 2 of 65 + Drwg (03Nos.) [56955]




C T O G N O O 3 5

Date: 31.01.2018

8.0 TEST DETAILS:

Sr. No.	Test Title	ICAT Sample I.D	Reference Standard	Observations/ Results
1.	Dry Heat / High Temperature Test	ICAT/AEEL/56955/01	As per IS: 9000 (Part 3/Sec 5)	Annexure-I SATISFACTORY
2.	Cold Test	ICAT/AEEL/56955/01	As per IS 9000 (Part 2/Sec 4 - 1977)	Annexure-II SATISFACTORY
3.	Thermal Shock Test	ICAT/AEEL/56955/05	As per AIS 140	Annexure-III SATISFACTORY
4.	Damp Heat Test	ICAT/AEEL/56955/04	As per IS 9000 (Part 5/Sec 2 - 1981)	Annexure-IV SATISFACTORY
5.	Salt Spray Test	ICAT/AEEL/56955/05	As per Clause 4.8 of IS 10250	Annexure-V SATISFACTORY
6.	High Voltage Test	ICAT/AEEL/56955/03	As per ISO 16750-2:2010	Annexure-VI SATISFACTORY
7.	Shock Test	ICAT/AEEL/56955/04	As per IS 9000-part 7 - 2006	Annexure-VII SATISFACTORY
8.	Vibration Test	ICAT/AEEL/56955/04	As per IS 9000-part 8 - 1981	Annexure-VIII SATISFACTORY
9.	Dust & Water ingress protection test	ICAT/AEEL/56955/02(Dust) & 03 (Water)	As per (IS/ IEC 60529 - 2001)	Annexure-IX SATISFACTORY
10.	Battery backup Test	ICAT/AEEL/56955/01	As per AIS 140 Cl. No. 6.3.2 (Sr. No. 5)	Annexure-X SATISFACTORY
11.	Reverse Polarity Protection without fuse	ICAT/AEEL/56955/01	As per Cl No.6.3.2 (6) of AIS 140	Annexure-XI SATISFACTORY
12.	Wiring Harness Test: a) Conductor Resistance Test b) Spark Test c) Immersion Test d) Flame Resistance Test	ICAT/AEEL/56955/W/a-d	As per IS 2465 & AIS 028	Annexure-XII SATISFACTORY

Innovation • Service • Excellence




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 SONIA NAIN Assistant Manager		 MADHUSUDAN JOSHI Deputy General Manager	Page 3 of 65 + Drwg (03Nos.) [56955]

C T O G N O O 3 5

Date: 31.01.2018

TEST DETAILS:

Sr. No.	Test Title	ICAT Sample I.D	Reference Standard	Observations/ Results
13.	Free Fall Test	ICAT/AEEL/56955/01	As per IS 9000 (Part VII/Sec 4)	Annexure-XIII SATISFACTORY
14.	Performance Parametric Test	ICAT/AEEL/56955/05	As per Cl. No. 6.3.2 of 10 of AIS 140	Annexure-XIV SATISFACTORY
15.	Insulation Resistance Test	ICAT/AEEL/56955/04	As per ISO 16750-2:2010	Annexure-XV SATISFACTORY
16.	Tracking Functionality Test	ICAT/AEEL/56955/03	As per Cl. No. 6.3.1 (1) of AIS 140	Annexure-XVI SATISFACTORY
17.	Location Accuracy Test	ICAT/AEEL/56955/06	As per Cl. No. 6.3.1 (2) of AIS 140	Annexure-XVII SATISFACTORY
18.	Acquisition Sensitivity Test	ICAT/AEEL/56955/06	As per Cl. No. 6.3.1 (3) of AIS 140	Annexure-XVIII SATISFACTORY
19.	Tracking Sensitivity Test	ICAT/AEEL/56955/06	As per Cl. No. 6.3.1 (4) of AIS 140	Annexure-XIX SATISFACTORY
20.	Cold-Start Time to First Fix (TTFF) Test	ICAT/AEEL/56955/06	As per Cl. No. 6.3.1 (5) of AIS 140	Annexure-XX SATISFACTORY
21.	Warm-Start Time to First Fix Test	ICAT/AEEL/56955/06	As per Cl. No. 6.3.1 (6) of AIS 140	Annexure-XXI SATISFACTORY
22.	Hot-Start Time to First Fix Test	ICAT/AEEL/56955/06	As per Cl. No. 6.3.1 (7) of AIS 140	Annexure-XXII SATISFACTORY
23.	Embedded SIM/UICC Test	ICAT/AEEL/56955/06	As per Cl. No. 6.3.1 (8) of AIS 140	Annexure-XXIII SATISFACTORY
24.	Functional Endurance Test	ICAT/AEEL/56955/01	As per Cl. No. 6.3.1 of 9 of AIS 140	Annexure-XXIV SATISFACTORY
25.	On Vehicle Dynamic Location Test	ICAT/AEEL/56955/01	As per Cl. No. 6.3.1 of 10 of AIS 140	Annexure-XXV SATISFACTORY
26.	SMS Fall Back	ICAT/AEEL/56955/06	As per Cl. No. 3.1.5 of AIS 140	Annexure-XXVI SATISFACTORY
27.	Data string Verification As Per Various Clauses Of AIS 140			Annexure-XXVII SATISFACTORY
28.	Various Tables Verification As Per Various Clauses Of AIS 140			Annexure-XXVIII SATISFACTORY
29.	Functional Requirements as per AIS 140			Annexure-XXIX SATISFACTORY

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