

ELECTRONICS REGIONAL TEST LABORATORY (SOUTH)
DEPARTMENT OF ELECTRONICS AND INFORMATION TECHNOLOGY
THIRUVANANTHAPURAM

TEST REPORT ON : Wireless Traffic Signal Controller(Master & Slave)

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| ERTL(S)/R/4202 | 13-12-2012 | 1 | 5 |

1. Indenter (Name & address of the Organization) : M/S. C DAC
Vellayambalam
Trivandrum
2. Indenter's Reference : SRF No.4202 dated 20-11-2012
3. Description & Identification of the item : (1) Wireless Traffic Signal Controller – Master
(Master Controller & Wireless Module)
(2) Wireless Traffic Signal Controller – Slave
(Slave Controller & Wireless Module)
Model : WiTraC
Sl.No : '001
4. Applicable Specification : As per IEC-60068 in conjunction with customer specification.
5. Test done :
1. Functional Test
 2. Dry Heat Test
 3. Dry heat test(storage)
 4. Cold Test
 5. Cold Test(storage)
 6. Temperature cycling Test
 7. Damp Heat Steady State Test
 8. Damp Heat Test(cyclic)

6. Equipments used

| Name | Model | Traceability | Validity |
|------------------------------------|-----------|----------------|------------|
| Low/High Temp. test chamber-Votsch | VT 7/100 | ETDC Bangalore | 28-02-2013 |
| Climatic test chamber- Weiss | WK11 1000 | ETDC Bangalore | 28-02-2013 |



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7.0 Results

| Sl. No | Test condition | Specification | Qty tested | Result | Remarks |
|--------|--|--|------------|------------------------|---------|
| 1.0 | Functional Test | As per Annexure -A | (1+1) | Complied | Nil |
| 2.0 | <u>Dry Heat Test As per IEC 60068-2-2</u> (Operational during last 2 Hrs) Temperature: +55 ± 2°C Duration : 6 Hrs | Shall be conditioned & operational during last 2 Hrs | (1+1) | Conditioned & Complied | Nil |
| 3.0 | Functional Test | As per Annexure -A | (1+1) | Complied | Nil |
| 4.0 | <u>Dry Heat Test (Storage) As per IEC 60068-2-2</u> (Non Operational) Temperature: +85 ± 2°C Duration : 16 Hrs | Shall be Conditioned | (1+1) | Conditioned | Nil |
| 5.0 | Functional Test | As per Annexure -A | (1+1) | Complied | Nil |
| 6.0 | <u>Cold Test As per IEC 60068-2-1</u> (Operational during last 2 Hrs) Temperature: -20 ± 3°C Duration : 6 Hrs | Shall be conditioned & operational during last 2 Hrs | (1+1) | Conditioned & Complied | Nil |
| 7.0 | Functional Test | As per Annexure -A | (1+1) | Complied | Nil |
| 8.0 | <u>Cold Test (Storage)As per IEC 60068-2-1</u> (Non Operational) Temperature: -40 ± 3°C Duration :16 Hrs | Shall be Conditioned | (1+1) | Conditioned | Nil |

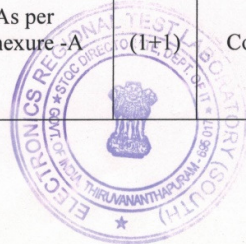


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| Sl. No | Test condition | Specification | Qty tested | Result | Remarks |
|--------|---|----------------------|------------|-------------|---------|
| 9.0 | Functional Test | As per Annexure -A | (1+1) | Complied | Nil |
| 10.0 | <u>Temperature Cycling Test As per IEC 60068-2-14 (Non Operational)</u> Upper Temperature : +55°C Lower Temperature : -40°C Ambient Temperature: 25°C Dwell time : 1hr Ambient : 5 minutes No. of cycles : 10 | Shall be Conditioned | (1+1) | Conditioned | Nil |
| 11.0 | Functional Test | As per Annexure -A | (1+1) | Complied | Nil |
| 12.0 | <u>Damp Heat Steady State Test As per IEC 60068-2-78 (Non Operational)</u> Temperature : + 40 ± 2°C Relative Humidity: 93 ± 3% Duration : 96 Hrs. | Shall be Conditioned | (1+1) | Conditioned | Nil |
| 13.0 | Functional Test | As per Annexure -A | (1+1) | Complied | Nil |
| 14.0 | <u>Damp Heat Test(Cyclic) As per IEC 60068-2-30 (Non Operational)</u> Temperature : + 40 ± 2°C Relative Humidity : 95% No. Cycle : 1(12+12Hrs) Duration : 24 Hrs. | Shall be Conditioned | (1+1) | Conditioned | Nil |
| 15.0 | Functional Test | As per Annexure -A | (1+1) | Complied | Nil |



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8. General Remarks :-

8.1 This test report is applicable only for the sample identified as per Sr.No.3.

8.2 Functional test was carried out as per the procedure and test setup provided by customer.

ISSUED BY

HEAD CSC

T. SANU

Scientist 'D'

ERTL (S) Dept. of Electronics & IT

Ministry of Communications & IT

STQC Directorate

Sreekariyam P.O, Thiruvananthapuram-17



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ANNEXURE 'A'

Procedure for Functional Test

Master controller Set up:

1. Connect the wireless module of the master to the WiTrac master Controller board via the connector V5.
2. Connect the traffic signal LED board to the WiTrac Master controller board via the connector V10.
3. Connect one end of the power supply cable provided to the master power supply connector in the 12V power distribution board and the other end of the connector V9 in the WiTrac master Controller board.

Slave Controller Setup:

1. Connect the wireless module of the slave to the WiTrac Slave Controller board Via the connector v6
2. Connect the Traffic signal LED board to the WiTrac Slave Controller board via the connector V4.
3. Connect one end of the power supply cable provided to the slave power supply connector in the 12 V power distribution board and the other end to the connector V1 in the WiTrac Slave Controller board.

General procedure

1. Switch on power supply and observe the traffic pattern as below
 - a) All amber LED flashes for 5 sec.
 - b) Then all red lamps become ON for 5 sec.
 - c) Then the actual signalling works as per the below timing sequences continuously repeating seq.1 to seq.6

| Sequence number | Master Controller | Slave controller | Time Sec. |
|-----------------|-------------------|------------------|-----------|
| 1 | Green | Red | 5 |
| 2 | Amber | Red | 3 |
| 3 | Red | Red | 3 |
| 4 | Red | Green | 5 |
| 5 | Red | Amber | 3 |
| 6 | Red | Red | 3 |

