

| PROJECT | CUSTOMER | VEHICLE |
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| Xtrapolis-PRASA | PRASA | 255 – TC1 – VFT |

RTR Vehicle Functional Static Testing TS255 TC1 Report
 GIB0000007379



| | CREATED | VERIFIED | APPROVED | DISTRIBUTION |
|------------------|-----------------|----------------|-----------------|---|
| Name | Lindani NGUBANE | Sifiso LUKHELE | Kgomotso NKOANA | Confidentiality Category <i>Restricted</i> <i>Project</i> <i>Normal</i> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> |
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| Signature | | | | Language EN |

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Table of modifications

| Rev | Date | Modifications Content | Writer |
|-----|------------|-----------------------|-----------------|
| A0 | 11/11/2024 | Creation | Lindani NGUBANE |

Internal validations

| | Name | Function | Date | Signature |
|-----------------|-----------------|---------------------|------------|--|
| Creator | Lindani NGUBANE | EPU Manager | 11/11/2024 | X  Lindani NGUBANE EPU Manager |
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Execution Plan

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|-------------------|------------|
| Start Date | 28/10/2024 |
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Serial Tests Report
TS255 – TC1 – VFT
RTR Vehicle Functional Static Testing Report

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Section 1 – Purpose / Objectives

1. Energy Distribution

Ensure the distribution of 110Vdc and 400Vac through the vehicle from the battery and Auxiliary converter

2. TCMS Network

Verify the working of the TCMS network and its core elements, i.e TRS, CRS.

3. Cabin Control

Verify the cabin control functions in both normal and backup modes, their commanding of the train lines, and the TCMS response to each function.

4. Internal Lighting

Verify the working of all internal lighting functions.

5. PACIS System

Verify power supply to all PACIS network equipment.

6. Dead Man

Verify the functioning of the dead man system, its associated components e.g buzzer, and its TCMS responses.

7. External Signalling

Ensure all external signalling functions on the TC car are working, this test excludes the pneumatic horn.

8. Rescue Mode and Emergency Disconnection

Verify the correct operation of the emergency disconnection function, as well as the correct activation of the Back-Up mode.

9. Driver Desk Illumination

Verify the correct operation of all driver desk indicators, as well as auxiliary systems such as the sunblind etc. that assist the driver.

10. Emergency Brake

Verify all electrical components of the Emergency braking system.

11. Service Brake

Verify all electrical components of the Service brake system.

12. Holding and Parking Brake

Verify all electrical components of the Parking/holding brake system.

13. Passenger Doors

Ensure proper operation of the train doors.

14. HVAC

Verify the voltage distribution to and correct operation of the HVAC system

15. Fire Protection

Verify the configuration of the fire detection units, as well as the presence of the safety resistor in the auxiliary converter.

16. Driving Command

Ensure the correct responses via train line and TCMS of all driving command signals.

17. Train-Ground Communication



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Setup the Train-to-ground systems, and verify correct installation of the antennas by VSWR test.

18. Vehicle Normalization

Ensure that all connectors, panels, and covers are normalized.



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Section 2 – Energy Distribution

2.1 Instructions list

2.1.1 015_NRG-Energy Distribution

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|------------------------------------|---------|
| 10001 | I | Energy Distribution (SPP=013/015/018) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10002 | I | Initial conditions | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10003 | I | Car should be de-prepared with non active cab | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10004 | I | Car should be without 400Vac shore supply | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10005 | I | All the Circuit Breakers should be OPEN | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10006 | I | Connector XBAT+ Positive and XBAT-2 Negative should not be connected to the battery | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10007 | I | Diodes | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10008 | I | Using a multimeter, check the presence and correct orientation of the diodes by doing the following continuity tests: 1.Continuity/Low resistance measured with Positive led of the multimeter on the Anode (L), and the negative on the Cathode (R) 2.No Continuity/Open circuit /infinite resistance measured with Negative led of the multimeter on the Anode(L), and the Positive on the Cathode(R) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10009 | R | Diode 15V1, between pins 6L and 7R of terminal block 93XT600 is present and correctly oriented | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10010 | R | Diode 18V3, between pins 1L and 1R of terminal block 93XT102 is present and correctly oriented | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10011 | R | Diode 18V1, between pins 2L and 2R of terminal block 93XT102 is present and correctly oriented | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10012 | R | Diode 18V2, between pins 3L and 3R of terminal block 93XT102 is present and correctly oriented | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |

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|-------|---|--|--|----|--|------------------------------------|-----|
| 10013 | I | Voltage Isolation | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10014 | A | Open the left side cover of the Static Converter (CVS) and check Visually that the cables are correctly connected to the points XBAT+(BCOF) and XBAT-1/ XBAT-2 (ISO_BCM) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10015 | R | Cables are correctly connected in the Power Bus XBAT+ Positive (BCOF) and XBAT-1/ XBAT-2 Negative (ISO_BCM) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10016 | A | Check Resistance (Ohm) between point XBAT+ Positive of the power bus (BCOF) and carbody | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10017 | R | Value (Ohm) Should be infinite. There is NO Continuity between point XBAT+ Positive of the power bus (BCOF) and carbody | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10018 | A | Check Resistance (Ohm) between point XBAT-1 Negative of the Power Bus (ISO_BCM) and carbody | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10019 | R | Value (Ohm) Should be about 0 Ohm. There is Continuity between point XBAT-1 Negative of the Power Bus (ISO_BCM) and carbody | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10020 | A | Check Resistance (Ohm) between point XBAT-2 Negative of the Power Bus (ISO_BCM) and carbody | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10021 | R | Value (Ohm) Should be about 0 Ohm. There is Continuity between point XBAT-1 Negative of the Power Bus (ISO_BCM) and carbody | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10022 | I | Close left side cover of the Static Converter (CVS) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10023 | A | Put Connector XBAT+ Positive and XBAT-2 Negative in the Battery. ENSURE BOTH SIDES OF THE TERMINALS ARE STURDY, CONNECTED CORRECTLY AND FASTENED | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10024 | R | Confirm the presence of battery voltage (above 80Vdc) between Circuit Breaker 15Q2 point 1 and carbody. (Permanent Line) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10025 | A | Close Circuit Breaker 15Q2 (Permanent Line) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |

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|-------|---|--|--|----|--|---------------------------------|-----|
| 10026 | A | Close Circuit Breaker 15Q4 (Permanent Line) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10027 | A | Close Circuit Breaker 15Q1 (Normal Line) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10028 | A | Close Circuit Breaker 15Q3 (Normal Line) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10029 | A | Close Circuit Breaker 13Q1 (230Vac) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10030 | A | Close Circuit Breaker 13Q3 (230Vac) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10031 | A | Close Circuit Breaker 13Q4 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10032 | I | Permanent and Normal Line | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10033 | A | Close Circuit Breaker 20Q1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10034 | A | Close Circuit Breaker 18Q1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10035 | A | Close Circuit Breaker 20Q2 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10036 | A | Close Circuit Breaker 18Q2 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10037 | A | Close Circuit Breaker 25Q6 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10038 | A | Close Circuit Breaker 27Q1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10039 | A | Prior to Switching the car ON and Plugging the shore supply onto the CVS. Open the CVS Agate cover | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10040 | R | The AGATE is OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10041 | I | MCE Software Upload | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10042 | A | Insert a USB programmed with the latest MCE Software into the MCE | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10043 | A | Close Circuit Breaker 40Q1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10044 | A | Wait about 8 minutes until the 6 yellow LEDs are blinking | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10045 | A | Open Circuit Breaker 40Q1, remove the USB and Close Circuit Breaker 40Q1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10046 | I | Low voltage watchdog and battery connection | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10047 | A | Turn the Backup Mode Switch 27S1 to "Back Up" position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |

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| 10048 | I | Cab Selected On Train Train Line Dev4/1 = END2 90XP14 pin 3 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10049 | A | Force [NI] Dev4/1 = 1.0 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10050 | I | 110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10051 | R | Read Defined Variable [NI] Dev5/40 = 1.0 | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10052 | I | Cab Selected On Train Train Line Dev4/1 = END2 90XP14 pin 3 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10053 | A | Force [NI] Dev4/1 = 0.0 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10054 | A | Reset circuit breaker 15Q4 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10055 | R | Check that relay 15K2 is not active | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10056 | I | 110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10057 | R | Read Defined Variable [NI] Dev5/40 = 0.0 | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10058 | A | Turn key 30A1.S1 to Active Cabin Position | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10059 | R | Relay 15K2 is active | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10060 | I | 110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10061 | R | Read Defined Variable [NI] Dev5/40 = 1.0 | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10062 | A | Turn and Hold the Battery Contactor Switch 18S1 to ON Position | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10063 | A | Wait only for TCMS to initialise | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10064 | A | Whilst PACIS is still initialising, turn and hold 18S1 to OFF position | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_nrg_tc1battoffreqr1__1 = 1.0 | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_nrg_tc1battoffreqr2__1 = 1.0 | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10067 | A | Put Battery Contactor Switch 18S1 to normal position | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10068 | I | Battery Connection Train Line Dev2/76 = Coupler pin 012 Dev2/80 = Coupler pin 112 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |

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| | | Dev5/79 = END2 90XP14 pin 30 | | | | | |
| 10069 | R | Read Defined Variable [NI] Dev2/76 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10070 | R | Read Defined Variable [NI] Dev2/80 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10071 | R | Read Defined Variable [NI] Dev5/79 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10072 | I | Battery Disconnection Train Line Dev2/77 = Coupler pin 027 Dev2/40 = Coupler pin 127 Dev5/75 = END2 90XP14 pin 31 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10073 | R | Read Defined Variable [NI] Dev2/77 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10074 | R | Read Defined Variable [NI] Dev2/40 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10075 | R | Read Defined Variable [NI] Dev5/75 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10076 | R | Confirm the presence of battery voltage on the Normal line, between pin 2 of terminal block 93XT600 and ground | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10077 | I | CVS Software Upload | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10078 | I | Perform the following steps to prepare for the software upload 1. Connect one side of the RS232 crossed cable to the Laptop and the other side to the Auxiliary Converter electronic at port RS232 2. Configure the RS232 port of the laptop as Com1 3. Open the maintenance software FLASH 32 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10079 | R | |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10080 | A | Click on Settings and replicate the image below. | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10081 | A | |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10082 | A | After configuration above, click Apply | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10083 | A | Click on Boot loader and follow the picture below (untick the check box) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10084 | R | |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10085 | A | After configuration above, click Apply | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |

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| 10086 | A | Click on Flash Memory and follow the picture below | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10087 | R | |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10088 | A | After configuration above click Apply, then Ok | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10089 | A | Click on File Open, according picture below | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10090 | R | |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10091 | A | Select the File Prasa_3KV_FPGA.S3 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10092 | A | |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10093 | A | Reset the 2 circuit breakers located close to Electronic (AA3S) on the CVS | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10094 | A | Timer 10.0 S | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10095 | A | Click on Program, according picture below | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10096 | R | |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10097 | R | |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10098 | R | Wait for the upload to complete to 100% , then Exit to close the program. | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10099 | I | AC address coding and Shore Supply Mode | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10100 | A | Use the AGATE to shutdown the train by resetting the circuit breakers CC(AL) and CC(ALS) in the AGATE apartment | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10101 | A | Remove connector -18XP11_1 from the Auxiliary Converter | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10102 | A | Check continuity between pins 51 and 63 ; and pins 52 and 64 on connector 18XP11_1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10103 | R | Pins 51 and 63 are continuous; and pins 52 and 63 are continuous | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10104 | A | Switch ON the IES Status on the test bench to make available the IES STATUS signal in the Auxiliary Converter | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10105 | R | Check continuity between point 65 and point 70 (IES STATUS) on connector - | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |

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| | | 18XP11_1 from the Auxiliary Converter (ACU) | | | | | |
| 10106 | A | Return the connector -18XP11_1 into the Auxiliary Converter | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10107 | A | Turn Switch "27S1" (Backup Mode Position) to 'Normal Mode' | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10108 | I | Turn the ACU Isolation Switch 18S3 to "Normal" position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10109 | A | Turn Battery Contactor Switch "18S1" to ON Position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10110 | I | In the LV Box, check the voltage on point 7 of terminal block 93XT600 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10111 | R | Voltage on point 7 of terminal block 93XT600 | | OK | 110 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10112 | I | NOTE: When shore supply is connected to Auxilliary Converter, BE CAREFUL not to touch connector -90XR53.X3/-90XR53.X2/-90XR53.X1 (3000Volts) and connector -90XR52.X1/--90XR52.X2/-90XR52.X3 (400Volts) located in the END 2 Intercar Connector of the car. | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10113 | A | Ensure shore supply power source is off. Input Shore Supply Connector on Auxiliary Converter and switch it on | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10114 | R | Auxiliary Converter is working | | OK | | Philemon Milani - 484650 | TC1 |
| 10115 | R | In the LV Box, check the voltage on point 7 of terminal block 93XT600, compare with the value read before, and see that the new value is higher than before | | OK | | Philemon Milani - 484650 | TC1 |
| 10116 | A | Perform a phase rotation measurement on Connector 90XR52 between phases U(X1),V(X2),W(X3) and ensure the rotation is in the correct direction | | OK | | Philemon Milani - 484650 | TC1 |
| 10117 | R | Phase rotation between U,V,W is correct | | OK | | Philemon Milani - 484650 | TC1 |
| 10118 | R | Check 230Vac between points L and N of the plug -13XT2 | | OK | | Philemon Milani - 484650 | TC1 |
| 10119 | R | Check 230Vac between points L and N of the plug -13XT3 | | OK | | Philemon Milani - 484650 | TC1 |
| 10120 | A | Remove the external shore supply | | OK | | Philemon Milani - 484650 | TC1 |

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| 10121 | A | Switch OFF the IES Status on the test bench to normalize the lines of status signal (IES STATUS) | OK | | Philemon Milani - 484650 | TC1 |
| 10122 | R | The battery is no longer being charged | OK | | Philemon Milani - 484650 | TC1 |
| 10123 | R | Check 0Vac between points L and N of the plug -13XT2 | OK | | Philemon Milani - 484650 | TC1 |
| 10124 | R | Check 0Vac between points L and N of the plug -13XT3 | OK | | Philemon Milani - 484650 | TC1 |
| 10125 | I | Battery Disconnection | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10126 | A | Turn Battery Contactor Switch "18S1" to OFF Position | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10127 | R | Battery is still connected to the Permanent Line | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10128 | A | Open the circuit breaker 40Q1 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10129 | A | Turn Switch "27S1" (Backup Mode Position) to 'Back up Mode' | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10130 | A | Turn Battery Contactor Switch "18S1" to ON Position | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10131 | A | Turn Driver's Master Key 30A1.S1 to Non Active Cabin | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10132 | R | Battery is still connected to the Normal Line | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10133 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10134 | A | Disconnect wire 18204LD to the CVS at terminal block -93XT104_5 point 10 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10135 | A | Turn and Hold the Battery Contactor Switch "18S1" to OFF Position | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10136 | A | Close the circuit breaker 40Q1 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10137 | I | Battery Disconnection Train Line Dev2/77 = Coupler pin 027 Dev2/40 = Coupler pin 127 Dev5/75 = END2 90XP14 pin 31 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10138 | R | Read Defined Variable [NI] Dev2/77 = 1.0 | OK | 1 | Dilikani Ngubane - 526515 | TC1 |
| 10139 | R | Read Defined Variable [NI] Dev2/40 = 1.0 | OK | 1 | Dilikani Ngubane - 526515 | TC1 |

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|-------|---|---|--|----|---|---------------------------------|-----|
| 10140 | R | Read Defined Variable [NI] Dev5/75 = 1.0 | | OK | 1 | Dilikani Ngubane - 526515 | TC1 |
| 10141 | R | The Normal Line is disconnected from the battery | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10142 | I | Battery Connection Train Line Dev2/76 = Coupler pin 012 Dev2/80 = Coupler pin 112 Dev5/79 = END2 90XP14 pin 30 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10143 | R | Read Defined Variable [NI] Dev2/76 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10144 | R | Read Defined Variable [NI] Dev2/80 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10145 | R | Read Defined Variable [NI] Dev5/79 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10146 | A | Reconnect wire 18204LD to the CVS at terminal block -93XT104_5 point 10 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10147 | I | Shore Supply Power ON | | OK | | Philemon Milani - 484650 | TC1 |
| 10148 | A | Turn the IES STATUS toggle switch on the Testbench into IES1 | | OK | | Philemon Milani - 484650 | TC1 |
| 10149 | A | Ensure shore supply power source is off. Input Shore Supply Connector on Auxiliary Converter and switch it on | | OK | | Philemon Milani - 484650 | TC1 |
| 10150 | I | End of test | | OK | | Philemon Milani - 484650 | TC1 |



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Section 3 – TCMS Network

3.1 Instructions list

3.1.1 025_NET-TCMS Network

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|----------------------------|---------|
| 10001 | I | TCMS Network (SPP=25) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10002 | I | Initial conditions | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10003 | I | Backup Mode Switch 27S1 in "Normal" Position | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10004 | I | Car should be prepared (Battery contactor switch 18S1 in ON position) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10005 | I | Vehicle test bench should be configured as TC2: 1. TC2 Dataplugs 2. MCE switch set to TC2 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10006 | I | The test bench should be connected to the vehicle | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10007 | I | Power supply to the 25A2 BRIOM 32/16 ETH 2 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10008 | A | Close Circuit Breaker 25Q2 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10009 | R | BRIOM 25A2 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10010 | A | Check visually that ground braid is connected to BRIOM | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10011 | I | Power supply to the 25A3 BRIOM 32/16 ETH 3 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10012 | A | Close Circuit Breaker 25Q3 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10013 | R | BRIOM 25A3 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10014 | A | Check visually that ground braid is connected to BRIOM | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10015 | I | Power supply to the 25A4 BRIOM 32/16 ETH 4 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10016 | A | Close Circuit Breaker 25Q4 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10017 | R | BRIOM 25A4 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |

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|-------|---|--|--|----|--|----------------------------|-----|
| 10018 | A | Check visually that ground braid is connected to BRIOM | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10019 | I | Power supply to the 25A5 BRIOM 32/16 ETH 5 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10020 | A | Close Circuit Breaker 25Q5 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10021 | R | BRIOM 25A5 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10022 | A | Check visually that ground braid is connected to BRIOM | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10023 | I | Power supply to the 25A6 BRIOM 32/16 ETH 6 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10024 | A | Close Circuit Breaker 25Q6 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10025 | R | BRIOM 25A6 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10026 | A | Check visually that ground braid is connected to BRIOM | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10027 | I | Power supply to the 25A7 BRIOM 32/16 ETH 7 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10028 | A | Close Circuit Breaker 25Q7 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10029 | R | BRIOM 25A7 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10030 | A | Check visually that ground braid is connected to BRIOM | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10031 | I | Power supply to the 25A11 SWITCH ETHERNET (CRS2) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10032 | A | Close Circuit Breaker 25Q11 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10033 | R | CRS2 25A11 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10034 | I | Power supply to the 25A12 SWITCH ETHERNET (CRS3) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10035 | A | Close Circuit Breaker 25Q12 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10036 | R | CRS3 25A12 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10037 | I | Power supply to the 25A15 TRAIN ROUTER SWITCH (TRS) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10038 | A | Close Circuit Breaker 25Q15 | | OK | | Mpumelelo Sithole - 529980 | TC1 |

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|-------|---|---|---|----|--|----------------------------|-----|
| 10039 | R | TRS 25A15 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10040 | A | Close Circuit Breaker 25Q14 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10041 | A | Close Circuit Breaker 25Q13 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10042 | A | Close Circuit Breaker 25Q10 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10043 | I | Power supply to the 25A13 SWITCH ETHERNET (CRS4) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10044 | R | CRS4 25A13 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10045 | I | Power supply to the 25A10 SWITCH ETHERNET (CRS1) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10046 | R | CRS1 25A10 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10047 | I | Power supply to the 25A14 ETHERNET REPEATER (TBR) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10048 | R | TBR 25A17 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10049 | I | Power supply to the 25A17 DDU ACE | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10050 | A | Close Circuit Breaker 25Q17 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10051 | R | The DDU is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10052 | I | DDU Software Upload | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10053 | I | Perform the following procedure to upload software on the DDU |  | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10054 | I | Ethernet Loop | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10055 | A | Check that the LED on ETH0 of the TBR is flashing | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10056 | R | The TBR has LED on port ETH0 flashing | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10057 | A | For each CRS, check that the LEDs on ports X3 and X4 are flashing | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10058 | R | CRS1 has LEDs on ports X3 and X4 flashing | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10059 | R | CRS4 has ONLY LED on port X4 flashing | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10060 | R | CRS2 has LEDs on ports X3 and X4 flashing | | OK | | Mpumelelo Sithole - 529980 | TC1 |



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|-------|---|--|--|----|--|----------------------------|-----|
| 10061 | R | CRS3 has LEDs on ports X3 and X4 flashing | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10062 | A | Check that the TRS has LEDs on ports ETH4 and ETH5 flashing | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10063 | R | The TRS has LEDs on ports ETH4 and ETH5 flashing | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10064 | R | Check on the DDU that all Router Switches are available on the network | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10065 | I | END OF TEST | | OK | | Mpumelelo Sithole - 529980 | TC1 |



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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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Section 4 – Cabin Control

4.1 Instructions list

4.1.1 020_CAB-Cabin Control

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|------------------------------|---------|
| 10001 | I | Cabin Control (SPP=020) | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10002 | I | Initial Conditions | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10003 | I | Shore supply is connected and ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10004 | I | Car should be prepared | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10005 | I | Cabin should be active | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10006 | I | Use the voltage detector/ magnetic stick to check whether a relay is energised or not | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10007 | I | Normal Mode - Active Cabin | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10008 | I | Cab Active TC1 Train Line Dev5/2 = END2 90XP14 pin 4 | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10009 | R | Read Defined Variable [NI] Dev5/2 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10010 | I | Master Key TC1 Train Line Dev5/17 = END2 90XP14 pin 17 | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10011 | R | Read Defined Variable [NI] Dev5/17 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC1 |
| 10012 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10013 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1keyrelayr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10014 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR3 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10015 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR4 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10016 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10017 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver2 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |

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|-------|---|---|----|---|---------------------------------|-----|
| 10018 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver3 = 0.0 | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10019 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR4 = 0.0 | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10020 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR5 = 0.0 | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10021 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiveno = 1.0 | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10022 | A | Force [TT] (MPU1)lo_cab_tc1cabdisconnectr1 = 1.0 | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10023 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver1 = 1.0 | OK | 1 | Thandanani Makhanya - 463827 | TC1 |
| 10024 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver2 = 0.0 | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10025 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver3 = 1.0 | OK | 1 | Thandanani Makhanya - 463827 | TC1 |
| 10026 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR4 = 1.0 | OK | 1 | Thandanani Makhanya - 463827 | TC1 |
| 10027 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR5 = 1.0 | OK | 1 | Thandanani Makhanya - 463827 | TC1 |
| 10028 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiveno = 0.0 | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10029 | I | Cab Active TC1 Train Line Dev5/2 = END2 90XP14 pin 4 | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10030 | R | Read Defined Variable [NI] Dev5/2 = 0.0 | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10031 | A | Force [TT] (MPU1)lo_cab_tc1cabdisconnectr1 = 0.0 | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10032 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver1 = 0.0 | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10033 | I | Normal Mode - Non-Active Cabin | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10034 | A | Turn Driver's Master Key 30A1.S1 to Non- Active Cabin Position | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10035 | I | Cab Active TC1 Train Line Dev5/2 = END2 90XP14 pin 4 | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10036 | R | Read Defined Variable [NI] Dev5/2 = 0.0 | OK | 0 | Thandanani Makhanya - 463827 | TC1 |

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|-------|---|---|--|----|---|---------------------------------|-----|
| 10037 | I | Master Key TC1 Train Line Dev5/17 = END2 90XP14 pin 17 | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10038 | R | Read Defined Variable [NI] Dev5/17 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10039 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1masterkey__1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10040 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC1 |
| 10041 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1keyrelay2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC1 |
| 10042 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR3 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC1 |
| 10043 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1KeyRelayR4 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC1 |
| 10044 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC1 |
| 10045 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver2 = 1.0 | | OK | 1 | Siphehile Mchunu - 491465 | TC1 |
| 10046 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver3 = 0.0 | | OK | 0 | Siphehile Mchunu - 491465 | TC1 |
| 10047 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR4 = 0.0 | | OK | 0 | Siphehile Mchunu - 491465 | TC1 |
| 10048 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR5 = 0.0 | | OK | 0 | Siphehile Mchunu - 491465 | TC1 |
| 10049 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiveno = 1.0 | | OK | 1 | Siphehile Mchunu - 491465 | TC1 |
| 10050 | A | Force [TT] (MPU1)lo_cab_tc1cabdisconnectr2 = 1.0 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10051 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver1 = 1.0 | | OK | 1 | Siphehile Mchunu - 491465 | TC1 |
| 10052 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver2 = 0.0 | | OK | 0 | Siphehile Mchunu - 491465 | TC1 |
| 10053 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiver3 = 1.0 | | OK | 1 | Siphehile Mchunu - 491465 | TC1 |
| 10054 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR4 = 1.0 | | OK | 1 | Siphehile Mchunu - 491465 | TC1 |
| 10055 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1CabinActiveR5 = 1.0 | | OK | 1 | Siphehile Mchunu - 491465 | TC1 |

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|-------|---|---|----|---|---------------------------------|-----|
| 10056 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1cabinactiveno = 0.0 | OK | 0 | Siphesihle Mchunu - 491465 | TC1 |
| 10057 | A | Release [TT] (MPU1)lo_cab_tc1cabdisconnectr1 | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10058 | A | Release [TT] (MPU1)lo_cab_tc1cabdisconnectr2 | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10059 | I | Other Cab Active | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10060 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1othercabinactive__1 = 1.0 | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10061 | I | Cab Selected on Train, Train Line Dev4/1 = END2 90XP14 pin 3 Dev2/1 = COUPLER pin 040 Dev2/2 = COUPLER pin 140 | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10062 | A | Force [NI] Dev4/1 = 1.0 | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10063 | R | Read Defined Variable [NI] Dev2/1 = 1.0 | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10064 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1othercabinactive__1 = 0.0 | OK | 0 | Siphesihle Mchunu - 491465 | TC1 |
| 10065 | R | Read Defined Variable [NI] Dev2/2 = 1.0 | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10066 | I | Cab Selected on Train, Train Line Dev4/1 = END2 90XP14 pin 3 Dev2/1 = COUPLER pin 040 Dev2/2 = COUPLER pin 140 | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10067 | A | Force [NI] Dev4/1 = 0.0 | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10068 | R | Read Defined Variable [NI] Dev2/1 = 0.0 | OK | 0 | Siphesihle Mchunu - 491465 | TC1 |
| 10069 | R | Read Defined Variable [NI] Dev2/2 = 0.0 | OK | 0 | Siphesihle Mchunu - 491465 | TC1 |
| 10070 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1othercabinactive__1 = 1.0 | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10071 | I | Backup Mode - Active Cabin | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10072 | A | Turn Switch '27S1' (Backup Mode Position) to 'BACKUP Position | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10073 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | OK | | Thandanani Makhanya - 463827 | TC1 |

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|-------|---|---|----|---|------------------------------|-----|
| 10074 | I | Cab Selected on Train, Train Line Dev5/1 = END2 90XP14 pin 3 | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10075 | R | Read Defined Variable [NI] Dev5/1 = 1.0 | OK | 1 | Siphehile Mchunu - 491465 | TC1 |
| 10076 | R | Check Relay "20K1a" is Energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10077 | R | Check Relay "20K1" is Energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10078 | R | Check Relay "20K1b" is Energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10079 | R | Check Relay "20K1c" is Energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10080 | R | Check Relay "20K2" is Energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10081 | R | Check Relay "20K12a" is Energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10082 | R | Check Relay "20K11" is Energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10083 | R | Check Relay "20K12b" is Energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10084 | R | Check Relay "20K10b" is Energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10085 | I | Backup Mode- Non-Active Cabin | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10086 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10087 | I | Cab Selected on Train, Train Line Dev5/1 = END2 90XP14 pin 3 | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10088 | R | Read Defined Variable [NI] Dev5/1 = 0.0 | OK | 0 | Siphehile Mchunu - 491465 | TC1 |
| 10089 | R | Check Relay "20K1" is De-energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10090 | R | Check Relay "20K1a" is De-energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10091 | R | Check Relay "20K1b" is De-energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10092 | R | Check Relay "20K1c" is De-energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10093 | R | Check Relay "20K2" is De-energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10094 | R | Check Relay "20K11" is De-energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10095 | R | Check Relay "20K12a" is De-energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10096 | R | Check Relay "20K12b" is De-energized | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10097 | R | Check Relay "20K10b" is De-energized | OK | | Siphehile Mchunu - 491465 | TC1 |

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|-------|---|--|--|----|---|---------------------------------|-----|
| 10098 | I | Automatic Start | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10099 | A | Turn Battery Contactor Switch 18S1" to OFF position | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10100 | A | Turn Switch '27S1' (Backup Mode Position) to 'Normal' Position | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10101 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10102 | A | Turn Battery Contactor Switch 18S1" to ON position - Allow time for TCMS to start up | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10103 | A | Close Circuit Breaker 84Q1 | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10104 | A | Press and hold the Automatic Start Pushbutton 20S1 | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10105 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1automaticstartr1 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10106 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1automaticstartr2 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10107 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc1automaticstartr1 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10108 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc1automaticstartr2 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10109 | R | Check that the pushbutton lamp on 20S1 is ON | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10110 | A | Release the Automatic Start Pushbutton 20S1 | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10111 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1automaticstartr1 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC1 |
| 10112 | R | Read Defined Variable [TT] (MPU1)li_cab_tc1automaticstartr2 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC1 |
| 10113 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc1automaticstartr1 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC1 |
| 10114 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc1automaticstartr2 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC1 |
| 10115 | I | Standby Mode | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10116 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Siphesihle Mchunu - 491465 | TC1 |

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|-------|---|---|--|----|---|---------------------------|-----|
| 10117 | A | Press and hold the Standby State pushbutton 20S2 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10118 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1ISMR1__1 = 1.0 | | OK | 1 | Siphehile Mchunu - 491465 | TC1 |
| 10119 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1ISMR2__1 = 1.0 | | OK | 1 | Siphehile Mchunu - 491465 | TC1 |
| 10120 | A | Release the Standby State pushbutton 20S2 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10121 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1ISMR1__1 = 0.0 | | OK | 0 | Siphehile Mchunu - 491465 | TC1 |
| 10122 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc1ISMR2__1 = 0.0 | | OK | 0 | Siphehile Mchunu - 491465 | TC1 |
| 10123 | A | Force [TT] (MPU1)lo_cab_tc1ismlamp = 1.0 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10124 | R | The Standby State pushbutton lamp 20S2 is ON | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10125 | A | Release [TT] (MPU1)lo_cab_tc1ismlamp | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10126 | R | The Standby State pushbutton lamp 20S2 is OFF | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10127 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10128 | I | END OF TEST | | OK | | Siphehile Mchunu - 491465 | TC1 |



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Section 5 – Internal Lighting

5.1 Instructions list

5.1.1 052_LGT-Internal Lighting

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|--|------|---------------|--------------|----------------------------|---------|
| 10001 | I | Internal Lighting (SPP=52) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10002 | I | Initial Conditions | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10003 | I | Car should be prepared | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10004 | I | Key 30A1.S1 should be in Active Cabin position | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10005 | I | Circuit Breakers | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10006 | A | Close Circuit Breaker 52Q1 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10007 | A | Close Circuit Breaker 52Q2 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10008 | A | Close Circuit Breaker 52Q3 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10009 | A | Close Circuit Breaker 52Q4 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10010 | A | Close Circuit Breaker 52Q5 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10011 | A | Close Circuit Breaker 52Q6 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10012 | I | Cab Ceiling Lighting | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10013 | A | Turn battery contactor switch 18S1 to OFF position | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10014 | A | Wait 3 minutes for cab lights to switch off | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10015 | R | All cabin ceiling lights are OFF (52U40, 52U41,52U42) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10016 | R | Both cab ceiling light pushbutton lamps are OFF (52S3 Left and 52S4 Right) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10017 | A | Push the cab lighting LEFT side button (52S3) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10018 | I | Wait 3 minutes for the lights to turn off. Continue with the following steps while waiting | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10019 | R | Cabin ceiling light 52U40 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |

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|-------|---|---|--|----|--|----------------------------|-----|
| 10020 | R | Cabin ceiling light 52U41 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10021 | R | Cabin ceiling light 52U42 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10022 | R | Left pushbutton lamp 52S3 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10023 | R | Right pushbutton lamp 52S4 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10024 | A | Press and hold the cab lighting LEFT side button (52S3) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10025 | R | The intensity of cabin ceiling light 52U40 decreases | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10026 | R | The intensity of cabin ceiling light 52U41 decreases | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10027 | R | The intensity of cabin ceiling light 52U42 decreases | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10028 | A | Release cab lighting LEFT side button (52S3) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10029 | I | After the 180s (3 min) timer is expired | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10030 | R | Cabin ceiling light 52U40 is OFF | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10031 | R | Cabin ceiling light 52U41 is OFF | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10032 | R | Cabin ceiling light 52U42 is OFF | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10033 | R | Left pushbutton lamp 52S3 is OFF | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10034 | R | Right pushbutton lamp 52S4 is OFF | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10035 | A | Push the cab lighting RIGHT side button (52S4) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10036 | R | Cabin ceiling light 52U40 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10037 | R | Cabin ceiling light 52U41 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10038 | R | Cabin ceiling light 52U42 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10039 | R | Right pushbutton lamp 52S4 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10040 | A | Wait 3 minutes for the light to switch off | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10041 | R | Cabin ceiling light 52U40 is OFF | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10042 | R | Cabin ceiling light 52U41 is OFF | | OK | | Mpumelelo Sithole - 529980 | TC1 |

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|-------|---|--|--|----|--|----------------------------|-----|
| 10043 | R | Cabin ceiling light 52U42 is OFF | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10044 | R | Right pushbutton lamp 52S4 is OFF | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10045 | I | Turn battery contactor switch 18S1 to ON position | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10046 | R | In the saloon, all right-side emergency lights are "ON" on all light modules | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10047 | R | In the saloon, all LEFT side emergency lights are "ON" on all light modules | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10048 | R | Both cab ceiling light pushbutton lamps are ON (52S3 Left and 52S4 Right) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10049 | A | Press and hold the cab lighting RIGHT side button (52S4) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10050 | R | The intensity of cabin ceiling light 52U40 decreases | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10051 | R | The intensity of cabin ceiling light 52U41 decreases | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10052 | R | The intensity of cabin ceiling light 52U42 decreases | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10053 | A | Release cab lighting RIGHT side button (52S4) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10054 | A | Open Circuit Breaker 52Q6 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10055 | A | Press and hold the Lamp Test pushbutton 84S1 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10056 | R | Both cab ceiling light pushbutton lamps are ON (52S3 Left and 52S4 Right) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10057 | A | Release the Lamp Test pushbutton 84S1 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10058 | R | Both cab ceiling light pushbutton lamps are OFF (52S3 Left and 52S4 Right) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10059 | A | Close Circuit Breaker 52Q6 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10060 | I | Cleaning Lighting Command | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10061 | I | Turn battery contactor switch 18S1 to OFF position | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10062 | A | Turn Cleaning Staff Lights Switch 52S6 to ON position | | OK | | Mpumelelo Sithole - 529980 | TC1 |

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|-------|---|--|--|----|--|----------------------------|-----|
| 10063 | R | The saloon RIGHT side emergency lights (low intensity) are "ON" on all light modules | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10064 | R | The saloon LEFT side emergency lights (low intensity) are "ON" on all light modules | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10065 | A | Open Circuit Breaker 52Q5 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10066 | R | The saloon RIGHT side emergency lights (low intensity) are OFF on all light modules | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10067 | R | The saloon LEFT side emergency lights (low intensity) are OFF on all light modules | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10068 | A | Close Circuit Breaker 52Q5 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10069 | I | Main Lighting Command | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10070 | A | Turn Cleaning Staff Lights Switch 52S6 to ON position | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10071 | R | All saloon emergency lights (low intensity) are "ON" on all light modules (Left & right) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10072 | I | Turn battery contactor switch 18S1 to ON position - allow time for TCMS to initialize | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10073 | A | Force [TT] (MPU1)lo_lgt_tc1mainlgtcmd = 1.0 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10074 | R | The saloon RIGHT side main lighting (high intensity) is "ON" on all light modules | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10075 | R | The saloon LEFT side main lighting (high intensity) is "ON" on all light modules | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10076 | A | Release [TT] (MPU1)lo_lgt_tc1mainlgtcmd | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10077 | R | All saloon emergency lights (low intensity) are "ON" on all light modules (Left & Right) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10078 | I | END OF TEST | | OK | | Mpumelelo Sithole - 529980 | TC1 |



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Section 6 – PACIS System

6.1 Instructions list

6.1.1 054_PIS-PACIS System

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|--|------|---------------|--------------|----------------------------|---------|
| 10001 | I | PACIS System (SPP=054) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10002 | I | Initial conditions | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10003 | I | Car must be prepared - battery contactor 18S1 closed | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10004 | I | Circuit Breakers | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10005 | A | Close Circuit Breaker 54Q1 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10006 | A | Close Circuit Breaker 54Q2 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10007 | A | Close Circuit Breaker 54Q3 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10008 | A | Close Circuit Breaker 54Q10 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10009 | A | Close Circuit Breaker 54Q11 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10010 | A | Close Circuit Breaker 54Q13 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10011 | A | Close Circuit Breaker 54Q15 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10012 | A | Close Circuit Breaker 55Q1 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10013 | A | Close Circuit Breaker 55Q2 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10014 | A | Close Circuit Breaker 55Q3 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10015 | I | Train Router Switch 'TRS' | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10016 | R | TRS1 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10017 | I | Power Supply to UMC Rack | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10018 | R | All cards on the UMC Rack are ON - PS, EBM, DPC-IOC, NVR, Media Server | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10019 | I | Driver Control Panel | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10020 | R | Driver Control Panel is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10021 | I | Ethernet Switch 'CRS1' | | OK | | Mpumelelo Sithole - 529980 | TC1 |

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|-------|---|--|--|----|------|----------------------------|-----|
| 10022 | R | CRS1 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10023 | I | DPAL-1 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10024 | R | DPAL-1 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10025 | I | DPAL-2 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10026 | R | DPAL-2 is ON | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10027 | I | Impedance of Loudspeaker | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10028 | I | Saloon Speakers Commanded by DPAL-1 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10029 | A | Measure the impedance on connector '54XP1_X4' between pins: z32(+) and z30 (-) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10030 | R | Impedance Result Max : x <= 24 () | | OK | 22.5 | Mpumelelo Sithole - 529980 | TC1 |
| 10031 | I | Saloon Speakers Commanded by DPAL-2 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10032 | A | Measure the impedance on connector '54XP2_X4' between pins: z32(+) and z30 (-) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10033 | R | Impedance Result Max : x <= 32 () | | OK | 30.9 | Mpumelelo Sithole - 529980 | TC1 |
| 10034 | I | Front Display 'FRT1' | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10035 | R | The PWR (power) LED is "ON" on the Front Display FRT1 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10036 | I | Lateral Display 'LAT1' | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10037 | R | The PWR (power) LED is "ON" on the Lateral Display LAT1 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10038 | I | Lateral Display 'LAT2' | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10039 | R | The PWR (power) LED is "ON" on the Lateral Display LAT2 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10040 | I | Interior Display 'INT1' | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10041 | R | The PWR (power) LED is "ON" on the Interior Display INT1 | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10042 | I | Interior Display 'INT2' | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10043 | R | The PWR (power) LED is "ON" on the Interior Display INT2 | | OK | | Mpumelelo Sithole - 529980 | TC1 |



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|-------|---|-------------|--|----|--|-------------------------------|-----|
| 10044 | I | END OF TEST | | OK | | Mpumelelo Sithole - 529980 | TC1 |
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Section 7 – Dead Man

7.1 Instructions list

7.1.1 060_DSD-Dead Man

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|--------------------------|---------|
| 10001 | I | Dead Man (SPP=60) | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10002 | I | Initial conditions | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10003 | I | TC car is in service and cabin should be active | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10004 | A | Position the "Dead Man Override" switch to "Normal" position. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10005 | I | Circuit Breakers | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10006 | A | Close Circuit Breaker 60Q1 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10007 | A | Close Circuit Breaker 30Q3 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10008 | I | Buzzer 60W1 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10009 | A | Force [TT] (MPU1)lo_dsd_tc1dmbuzzerr1 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10010 | R | The buzzer 60W1 is ON. A noise coming from the buzzer can be clearly heard in the cabin. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10011 | A | Release [TT] (MPU1)lo_dsd_tc1dmbuzzerr1 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10012 | R | The buzzer 60W1 is OFF. No noise coming from buzzer. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10013 | A | Force [TT] (MPU1)lo_dsd_tc1dmbuzzerr2 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10014 | R | The buzzer 60W1 is ON. A noise coming from the buzzer can be clearly heard in the cabin. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10015 | A | Release [TT] (MPU1)lo_dsd_tc1dmbuzzerr2 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10016 | R | The buzzer 60W1 is OFF. No noise coming from buzzer. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10017 | I | Dead Man Lamp | | OK | | Sizwe Sibanyoni - 484647 | TC1 |

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|-------|---|--|---|----|---|--------------------------|-----|
| 10018 | A | Position the Running Direction switch to "FORWARD" | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10019 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10020 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10021 | A | Position the Running Direction switch 30A1.S1 in "Neutral" | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10022 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10023 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10024 | R | On the alarm module, check the Dead man deactivated symbol is OFF. |  | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10025 | A | Force [TT] (MPU1)lo_dsd_tc1deadmanlampr1 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10026 | R | On the alarm module, check the Dead man deactivated symbol is ON | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10027 | A | Release [TT] (MPU1)lo_dsd_tc1deadmanlampr1 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10028 | R | On the alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10029 | A | Force [TT] (MPU1)lo_dsd_tc1deadmanlampr2 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10030 | R | On the alarm module, check the Dead man deactivated symbol is ON | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10031 | A | Release [TT] (MPU1)lo_dsd_tc1deadmanlampr2 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10032 | R | On the alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10033 | I | DSD function | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10034 | A | Position the Running Direction switch to "FORWARD" | | OK | | Sizwe Sibanyoni - 484647 | TC1 |

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|-------|---|--|---|----|---|--------------------------|-----|
| 10035 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10036 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10037 | A | Timer 5.0 S | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10038 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10039 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10040 | R | On alarm module, check the Dead Man deactivated symbol is ON |  | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10041 | A | Press and hold the dead man button 60S3 on the driver desk | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10042 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10043 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10044 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10045 | R | On alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10046 | A | Release the dead man button 60S3 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10047 | A | Timer 5.0 S | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10048 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelayr1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10049 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10050 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10051 | R | On alarm module, check the Dead man deactivated symbol is ON | | OK | | Sizwe Sibanyoni - 484647 | TC1 |

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|-------|---|--|---|----|---|--------------------------|-----|
| 10052 | A | Press and hold the dead man switch, which is positioned on master controller. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10053 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelay1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10054 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10055 | R | On the alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10056 | A | Release the dead man button on the master controller | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10057 | A | Timer 5.0 S | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10058 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelay1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10059 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanr1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10060 | R | On alarm module, check the Dead Man deactivated symbol is ON | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10061 | I | DSD Override indication | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10062 | R | On the alarm module, verify that the Dead Man override (60H2) symbol is OFF. |  | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10063 | A | Press and hold dead man button 60S3 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10064 | A | Position the "Dead Man Override" switch to "Override" position (do not release the dead man device actuated in the previous step). | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10065 | R | On the alarm module, verify that the Dead Man override (60H2) symbol is ON |  | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelay1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanoverridr1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10068 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanoverridr2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |

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|-------|---|---|---|----|---|--------------------------|-----|
| 10069 | A | Release the dead man button | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10070 | A | Position the "Dead Man Override" switch to "Normal" position. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10071 | R | On the alarm module, verify that the Dead Man override (60H2) symbol is OFF |  | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10072 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanoverridr1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10073 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1deadmanoverridr2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10074 | R | On alarm module, check the Dead man deactivated (60H1) symbol is ON | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10075 | A | Position the Running Direction switch 30A1.S1 in "Neutral" | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10076 | R | On alarm module, check the Dead man deactivated symbol is OFF | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10077 | I | END OF TEST | | OK | | Sizwe Sibanyoni - 484647 | TC1 |



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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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Section 8 – External Signalling

8.1 Instructions list

8.1.1 070_SIG-External Signalling

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|--|---|---------------|--------------|--------------------------|---------|
| 10001 | I | External Signalling (SPP=70) | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10002 | I | Use the image below for reference throughout the procedure |  | OK | | Gcobani Baliso - 480570 | TC1 |
| 10003 | I | Initial Conditions | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10004 | A | Turn IES switch on Test bench to ON position | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10005 | I | Shore Supply is connected to the car | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10006 | I | TC1 car prepared and cab active | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10007 | A | Check if the mirrors do not have cracks or is not chipped. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10008 | I | Circuit Breakers | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10009 | A | Close Circuit Breaker 70Q1 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10010 | A | Close Circuit Breaker 70Q2 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10011 | A | Close Circuit Breaker 70Q3 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10012 | A | Close Circuit Breaker 72Q4 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10013 | A | Close Circuit Breaker 75Q1 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10014 | A | Close Circuit Breaker 72Q2 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10015 | I | Left Platform and Head Lights | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10016 | A | Check that the following external lights on the LEFT are ON: | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10017 | R | Platform lights 70H12 white LEDs | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10018 | R | Platform lights 70H5 while light | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10019 | R | Head lights 70H3 white light | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10020 | I | Right Platform and Head Lights | | OK | | Sizwe Sibanyoni - 484647 | TC1 |

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|-------|---|---|--|----|---|--------------------------|-----|
| 10021 | A | Check that the following external lights on the RIGHT are on: | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10022 | R | Platform lights 70H11 white LEDs | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10023 | R | Platform lights 70H6 while light | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10024 | R | Head lights 70H4 white light | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10025 | I | Back Lights | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10026 | A | Turn key 30A1.S1 to Non-Active Cabin Position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10027 | A | Reset Circuit Breaker 20Q2 (On and Off) | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10028 | R | All white lights, on the LEFT and Right side are OFF | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10029 | R | Left red light 70H7 is ON | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10030 | R | Right red light 70H9 is ON | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10031 | R | Red LEDs on Platform light 70H11 are ON | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10032 | I | Main lights and dimming | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10033 | A | Switch the External lights switch 70S2 to "Bright Light" position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10034 | R | The External lights switch 70S2 lamp is ON | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10035 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc1headlight1 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10036 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc1headlight2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10037 | R | The headlights 70H3 and 70H4 are in bright light configuration | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10038 | A | Switch the External lights switch 70S2 to "Normal" or "Dimmed" position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10039 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc1headlight1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10040 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc1headlight2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |

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|-------|---|--|---|----|--|--------------------------|-----|
| 10041 | R | The External lights switch lamp 70S2 is OFF | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10042 | R | The headlights 70H3 and 70H4 are in normal/dimmed configuration | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10043 | I | Sunshade adjustment settings | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10044 | I | To set the limits, it must be done using the appropriate tool (square torx/ screwdriver). The white nut moves the limit down and the red one moves up. |  | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10045 | A | Look at the picture below for upper limit and the lower limit. The yellow line represents the upper limit, and the green one represents the lower limit. |  | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10046 | A | Rotate the red nut with a square torx either clockwise or ant-clockwise until the upper limit is set to the desired position as shown on the picture above. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10047 | A | Turn the Sunshade Control Switch 72S3 to position 1 (Up) and maintain it | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10048 | R | The sunshade stops at the upper position that was set above. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10049 | A | Rotate the white nut with a square torx either clockwise or anti-clockwise until the lower limit is set to the desired position as shown on the picture above. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10050 | A | Turn the Sunshade Control Switch 72S3 to position 2 (down) and maintain it | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10051 | R | The sunshade stops at the lower position that was set above. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10052 | I | Coupled train | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10053 | A | Turn key 30A1.S1 to Active cabin Position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10054 | R | All white lights are "ON", and red lights are OFF. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10055 | I | Coupling Relay Train Line Dev1/62 = Coupler Pin 103 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10056 | A | Force [NI] Dev1/62 = 1 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10057 | R | All External lights are "OFF". | | OK | | Sizwe Sibanyoni - 484647 | TC1 |



| | | | | | | | |
|-------|---|--|--|----|--|-----------------------------|-----|
| 10058 | I | Coupling Relay Train Line Dev1/62 = Coupler Pin 103 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10059 | R | All White lights are "NO", and red Lights are OFF. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10060 | A | Force [NI] Dev1/62 = 0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10061 | I | END OF TEST | | OK | | Sizwe Sibanyoni - 484647 | TC1 |

8.1.2 070_SIG_2-Warning Hooters

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|--------------------------|---------|
| 10001 | I | Warning Hooters SPP=071 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10002 | I | Initial Conditions | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10003 | I | The air in the main pipe should be at least 4 bar | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10004 | I | For this test wear earplugs. | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10005 | I | Start of Test | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10006 | R | The pressure setting of point H1.12 must be 4 bar Result Min/Max : 4<= x<= 8 (Bar) | | OK | 4.8 | Sizwe Sibanyoni - 484647 | TC1 |
| 10007 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningHootersR1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10008 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningHootersR2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10009 | A | Press the foot pedal 57A13.S1 to actuate the horn and maintain it | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10010 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningHootersR1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10011 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningHootersR2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10012 | I | The pressure setting of point H1.12 remain at 4 bar | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10013 | A | Release the foot heater pedal | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10014 | R | Horn sound can be heard at 100m distance from the cab | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10015 | A | Release the foot heater pedal | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10016 | R | Horn sound stops | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10017 | R | Read Defined Variable [TT] | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |

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|-------|---|--|----|---|--------------------------|-----|--|
| | | (MPU1)Li_SGL_Tc1WarningHootersR1 = 1.0 | | | | | |
| 10018 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningHootersR2 = 1.0 | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 | |
| 10019 | A | Actuate the low pitch horn by pressing down the valve H1.3.1 under the driver's desk | OK | | Sizwe Sibanyoni - 484647 | TC1 | |
| 10020 | R | The horn sound can be heard in low pitch | OK | | Sizwe Sibanyoni - 484647 | TC1 | |
| 10021 | A | Release the valve H1.3.1 | OK | | Sizwe Sibanyoni - 484647 | TC1 | |
| 10022 | R | Horn sound stops | OK | | Sizwe Sibanyoni - 484647 | TC1 | |
| 10023 | I | Electric Horn Test | OK | | Sizwe Sibanyoni - 484647 | TC1 | |
| 10024 | A | Press the button 71S1 and maintain it | OK | | Sizwe Sibanyoni - 484647 | TC1 | |
| 10025 | R | The sound of the whistle can be heard at least 20m from the cab | OK | | Sizwe Sibanyoni - 484647 | TC1 | |
| 10026 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningWhistleR1 = 1.0 | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 | |
| 10027 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningWhistleR2 = 1.0 | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 | |
| 10028 | A | Release the button 71S1 | OK | | Sizwe Sibanyoni - 484647 | TC1 | |
| 10029 | R | Whistle sound stops | OK | | Sizwe Sibanyoni - 484647 | TC1 | |
| 10030 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningWhistleR1 = 0.0 | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 | |
| 10031 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc1WarningWhistleR2 = 0.0 | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 | |
| 10032 | I | END OF TEST | OK | | Sizwe Sibanyoni - 484647 | TC1 | |



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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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Section 9 – Rescue Mode and Emergency Disconnection

9.1 Instructions list

9.1.1 027_ERM-Rescue Mode and Emergency Disconnection

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|-------------------------------|---------|
| 10001 | I | Rescue Mode and Emergency Disconnection (SPP=27) | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10002 | I | Initial Conditions | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10003 | I | Car is powered OFF | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10004 | I | Backup Mode | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10005 | A | Turn Switch '27S1' (Backup Mode Position) to 'BACKUP' Position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10006 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10007 | A | Turn Battery contactor Switch 18S1 to ON position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10008 | I | Backup Mode Train Lines Dev5/33 = END2 90XP15 pin 23 Dev2/67 = Coupler pin 007 Dev2/25 = Coupler pin 107 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10009 | R | Read Defined Variable [NI] Dev5/33 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10010 | R | Read Defined Variable [NI] Dev2/25 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10011 | R | Read Defined Variable [NI] Dev2/67 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10012 | R | Relay 27K1 is energised | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10013 | R | Relay 27K2 is De-energised | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10014 | A | Timer 30.0 S | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10015 | R | Relay 27K2 is De-energised | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10016 | A | Timer 30.0 S | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10017 | R | Relay 27K2 is energised | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10018 | I | Check that the Backup mode LED 27H2 is ON | TCMS | OK | | Paseka Ditlhakanyane - 491468 | TC1 |

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|-------|---|---|--|----|---|-------------------------------|-----|
| 10019 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10020 | I | Backup Mode Train Lines Dev5/33 = END2 90XP15 pin 23 Dev2/67 = Coupler pin 007 Dev2/25 = Coupler pin 107 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10021 | R | Read Defined Variable [NI] Dev5/33 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10022 | R | Read Defined Variable [NI] Dev2/25 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10023 | R | Read Defined Variable [NI] Dev2/67 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10024 | R | Relay 27K1 is De-energised | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10025 | R | Relay 27K2 is De-energised | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10026 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10027 | A | Turn Battery contactor Switch 18S1 to OFF position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10028 | I | Turn ERTMS Isolation Switch 62S1 to Normal position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10029 | A | Turn Switch '27S1' (Backup Mode Position) to Normal Position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10030 | A | Turn Battery contactor Switch 18S1 to ON position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10031 | A | Check continuity between point 20 on Backup State Switch 27S1 and ground | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10032 | R | The points are continuous | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10033 | I | Backup Mode Train Line Dev5/33 = END2 90XP15 pin 23 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10034 | R | Read Defined Variable [NI] Dev5/33 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10035 | I | Emergency Disconnection | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10036 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10037 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10038 | R | Read Defined Variable [NI] Dev2/79 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |

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|-------|---|---|----|---|------------------------------|-----|
| 10039 | R | Read Defined Variable [NI] Dev2/75 = 1.0 | OK | 1 | Paseka Dithakanyane - 491468 | TC1 |
| 10040 | I | Emergency Brake ERTMS 1 Train Line Dev4/88 = END2 90XP14 pin 18 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10041 | A | Force [NI] Dev4/88 = 1.0 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10042 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10043 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | OK | 1 | Paseka Dithakanyane - 491468 | TC1 |
| 10044 | R | Read Defined Variable [NI] Dev2/79 = 1.0 | OK | 1 | Paseka Dithakanyane - 491468 | TC1 |
| 10045 | R | Read Defined Variable [NI] Dev2/75 = 1.0 | OK | 1 | Paseka Dithakanyane - 491468 | TC1 |
| 10046 | I | Emergency Brake ERTMS 2 Train Line Dev4/80 = END2 90XP14 pin 20 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10047 | A | Force [NI] Dev4/80 = 1.0 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10048 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10049 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | OK | 0 | Paseka Dithakanyane - 491468 | TC1 |
| 10050 | R | Read Defined Variable [NI] Dev2/79 = 0.0 | OK | 0 | Paseka Dithakanyane - 491468 | TC1 |
| 10051 | R | Read Defined Variable [NI] Dev2/75 = 0.0 | OK | 0 | Paseka Dithakanyane - 491468 | TC1 |
| 10052 | I | Emergency Brake ERTMS 1 Train Line Dev4/88 = END2 90XP14 pin 18 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10053 | A | Force [NI] Dev4/88 = 0.0 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10054 | I | Emergency Brake ERTMS 2 Train Line Dev4/80 = END2 90XP14 pin 20 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10055 | A | Force [NI] Dev4/80 = 0.0 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10056 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10057 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | OK | 1 | Paseka Dithakanyane - 491468 | TC1 |
| 10058 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10059 | A | Force [NI] Dev4/39 = 1.0 | OK | | Paseka Dithakanyane - 491468 | TC1 |

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|-------|---|---|----|---|----------------------------------|-----|
| 10060 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10061 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10062 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10063 | A | Force [NI] Dev4/39 = 0.0 | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10064 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10065 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10066 | A | Place ERTMS Isolation Switch in "Isolation" position | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr1 = 1.0 | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10068 | R | Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr2 = 1.0 | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10069 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10070 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10071 | A | Push the blue "Emergency Pantograph Down" pushbutton | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10072 | R | Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr1 = 0.0 | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10073 | R | Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr2 = 0.0 | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10074 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10075 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10076 | A | Release the "Emergency Pantograph Down" pushbutton | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10077 | R | Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr1 = 1.0 | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10078 | R | Read Defined Variable [TT] (MPU1)li_erm_tc1noemerdiscr2 = 1.0 | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10079 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 | OK | | Paseka Ditlhakanyane - 491468 | TC1 |



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|-------|---|--|--|----|---|----------------------------------|-----|
| 10080 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10081 | I | END OF TEST | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |



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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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Section 10 – Driver Desk Illumination

10.1 Instructions list

10.1.1 084_DDK-Driver Desk Illumination

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|---------------------------------|---------|
| 10001 | I | Driver Desk Illumination (SPP=084) | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10002 | I | Initial Conditions: | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10003 | I | Car is prepared and cab is active | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10004 | A | Close Circuit Breaker 81Q1 | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10005 | I | Indicator Modules | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10006 | R | Check that the Line Indicator Module 81A1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10007 | R | Check that the Pressure gauge 84P1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10008 | R | Check that the light of the Speed Indicator 61A2 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10009 | I | Lamp Test | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10010 | A | Press and hold the Lamp Test pushbutton 84S1 | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10011 | R | Check that the White Lamp Test pushbutton Lamp 84S1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10012 | R | Check that the White Automatic Start pushbutton lamp 20S1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10013 | R | Check that the orange Standby State pushbutton lamp 20S2 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10014 | R | Check that the White Pantograph Up/Down pushbutton lamp 21S1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10015 | R | Check that the White Close Main Circuit Breaker pushbutton lamp 22S11 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10016 | R | Check that the Red Open Main Circuit Breaker pushbutton lamp 22S12 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10017 | R | Check that the White Reduced Power lamp 30S2 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |

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|-------|---|--|---|----|--|---------------------------------|-----|
| 10018 | R | Check that the Red Override Passenger Emergency Alarm pushbutton lamp 44S5 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10019 | R | Check that the Yellow Door Auth Left pushbutton lamp 50S5 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10020 | R | Check that the Yellow Door Auth Right pushbutton lamp 50S6 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10021 | R | Check that the White Door Open Left pushbutton lamp 50S1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10022 | R | Check that the White Door Open Right pushbutton lamp 50S2 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10023 | R | Check that the Blue Door Close Left pushbutton lamp 50S3 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10024 | R | Check that the Blue Door Close Right pushbutton lamp 50S4 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10025 | R | Check that the White Cab Lighting Left Side pushbutton lamp 52S3 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10026 | R | Check that the White Cab Lighting Right Side pushbutton lamp 52S4 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10027 | R | Check that the White Foot Heater pushbutton lamp 57S3 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10028 | R | Check that the Red Front CCTV Event pushbutton lamp 66S1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10029 | R | Check that the White Windscreen Demister pushbutton lamp 72S2 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10030 | I | Use the following image to verify the train status LEDs 84A1 |  | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10031 | R | Check that 31H1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10032 | R | Check that 60H1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10033 | R | Check that 18H1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10034 | R | Check that 44H4 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10035 | R | Check that 44H1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10036 | R | Check that 51H1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10037 | R | Check that 45H2 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |

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|-------|---|--|---|----|--|---------------------------------|-----|
| 10038 | R | Check that 40H2 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10039 | R | Check that 40H1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10040 | R | Check that 41H1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10041 | R | Check that 60H2 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10042 | R | Check that 27H2 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10043 | R | Check that 62H1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10044 | R | Check that 44H5 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10045 | R | Check that 31H2 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10046 | R | Check that 67H1 is ON | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10047 | A | Release the Lamp Test pushbutton 84S1 | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10048 | I | Dimmer Switch Adjustment | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10049 | I | Open the driver desk plate on which the dimmer switch 84S2 is located to access the bottom of the dimmer switch. Use the image below to identify the trimmer screw which is used to adjust the limits of the dimmer |  | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10050 | A | Adjust the trimmer (potentiometer) to increase the lower limit of the dimmer - allowing the cab lights to dim to a minimum lighting that is still visible and not zero. Then, reassemble the driver desk plate in location | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10051 | A | Press the Lamp Test pushbutton 84S1 and maintain it | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10052 | A | While pressing 84S1, turn the dimmer switch and observe that the brightness of all the following lamps increases and decreases accordingly | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10053 | R | Check that 61A2 (Speed Indicator) can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10054 | R | Check that the Line Indicator Module 81A1 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10055 | R | Check that the Pressure gauge 84P1 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |

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|-------|---|---|--|----|--|---------------------------------|-----|
| 10056 | R | Check that the Train Status LEDs 84A1 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10057 | R | Check that 84S1 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10058 | R | Check that 20S1 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10059 | R | Check that 20S2 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10060 | R | Check that 21S1 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10061 | R | Check that 22S11 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10062 | R | Check that 22S12 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10063 | R | Check that 30S2 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10064 | R | Check that 44S5 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10065 | R | Check that 50S5 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10066 | R | Check that 50S6 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10067 | R | Check that 50S1 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10068 | R | Check that 50S2 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10069 | R | Check that 50S3 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10070 | R | Check that 50S4 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10071 | R | Check that 52S3 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10072 | R | Check that 52S4 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10073 | R | Check that 57S3 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10074 | R | Check that 66S1 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10075 | R | Check that 67S1 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10076 | R | Check that 72S2 can be dimmed | | OK | | Thandanani Makhanya - 463827 | TC1 |
| 10077 | I | END OF TEST | | OK | | Thandanani Makhanya - 463827 | TC1 |



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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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Section 11 – Emergency Brake

11.1 Instructions list

11.1.1 044_UBK-Emergency Brake

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|---|---------------|--------------|--------------------------|---------|
| 10001 | I | Emergency Brake (SPP=044) | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10002 | I | Initial Conditions | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10003 | I | No air connected to the vehicle OR main pipe pressure below 6Bar | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10004 | I | No PEAs are activated | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10005 | I | Battery Contactor Switch 18S1 in ON position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10006 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10007 | I | Direction Switch 30A1.S2 in "Neutral" position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10008 | A | Open and Close (Reset) Circuit breaker 20Q2 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10009 | I | Back Up mode switch 27S1 in Normal position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10010 | I | Visual Inspection | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10011 | A | Physically and visually inspect all the Disk Break Units (DBU) and brake pads, to ensure they are securely fitted |  | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10012 | R | All the brake DBUs are correctly installed, and all the brake pads are correctly installed and locked | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10013 | A | Check the piping installation | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10014 | R | All the pipes are installed on the vehicle | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10015 | A | Check all the Passenger Emergency Alarm handles, and ensure they are connected to their respective connectors | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10016 | R | All the PEAs are installed and connected | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10017 | I | Circuit Breakers | | OK | | Sizwe Sibanyoni - 484647 | TC1 |

| | | | | | | | |
|-------|---|--|--|----|---|-----------------------------|-----|
| 10018 | A | Close Circuit Breaker 44Q1 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10019 | A | Close Circuit Breaker 44Q2 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10020 | A | Close Circuit Breaker 44Q3 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10021 | A | Close Circuit Breaker 44Q4 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10022 | I | Emergency Brake Loop | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10023 | I | Emergency Brake Loop Train Line Dev2/3 = coupler pin 005 Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10024 | R | Read Defined Variable [NI] Dev2/3 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10025 | R | Read Defined Variable [NI] Dev2/4 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10026 | R | Read Defined Variable [NI] Dev5/5 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10027 | A | Close the Isolation cock to the coupler F2.1/1; and connect the air supply to the vehicle coupling flexible hose F3/1. Turn on the air supply and allow the pressure to reach 7Bar. Check the pressure on test point C 1.1 test point: B RTP | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10028 | R | The pressure on test point C 1.1 >= 7 Bar | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10029 | I | Emergency Brake Loop Train Line Dev5/5 = END2 90XP14 pin 8 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10030 | R | Read Defined Variable [NI] Dev5/5 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10031 | A | Push the Emergency Brake Mushroom 44S1 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10032 | I | Emergency Brake Loop Train Line Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10033 | R | Read Defined Variable [NI] Dev2/4 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10034 | R | Read Defined Variable [NI] Dev5/5 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10035 | A | Release the Emergency Brake Mushroom 44S1 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10036 | I | Emergency Brake Loop Train Line Dev5/5 = END2 90XP14 pin 8 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10037 | R | Read Defined Variable [NI] Dev5/5 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |

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| 10038 | I | Coupling | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10039 | I | Coupling Relay Train Line Dev1/62 = coupler pin 103 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10040 | A | Force [NI] Dev1/62 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10041 | R | Read Defined Variable [TT] (MPU1)Li_CPM_Tc1CoupDetec1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10042 | I | Emergency Brake Loop Train Line Dev2/3 = coupler pin 005 Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10043 | R | Read Defined Variable [NI] Dev2/3 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10044 | R | Read Defined Variable [NI] Dev2/4 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10045 | R | Read Defined Variable [NI] Dev5/5 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10046 | I | Coupling Relay Train Line Dev1/62 = coupler pin 103 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10047 | A | Force [NI] Dev1/62 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10048 | R | Read Defined Variable [TT] (MPU1)Li_CPM_Tc1CoupDetec1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10049 | I | Emergency Brake Loop Train Line Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10050 | R | Read Defined Variable [NI] Dev2/4 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10051 | R | Read Defined Variable [NI] Dev5/5 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10052 | I | Loop Override | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10053 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10054 | A | Force [TT] (BCU2)li_mp_ps_ok = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10055 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1ebloopoverrider1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10056 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1ebloopoverrider2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10057 | A | Turn the Emergency Braking Loop Override Switch 44S2 to "Override/Bypass" position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |

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| 10058 | R | Check that the Emergency Braking Loop Override Lamp 44H5 is ON |  | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10059 | I | Emergency Brake Loop Override Train Line Dev5/6 = END2 90XP14 pin 9 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10060 | R | Read Defined Variable [NI] Dev5/6 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10061 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1ebloopoverrider1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10062 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1ebloopoverrider2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10063 | A | Return the Emergency Braking Loop Override Switch 44S2 to "Normal" position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10064 | R | Check that the Emergency Braking Loop Override Lamp 44H5 is OFF |  | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10065 | I | Emergency Brake Loop Override Train Line Dev5/6 = END2 90XP14 pin 9 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10066 | R | Read Defined Variable [NI] Dev5/6 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1ebloopoverrider1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10068 | I | Reset Emergency Brake | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10069 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelayr1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10070 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelayr2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10071 | I | Turn Direction Switch 30A1.S2 to "Forward" position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10072 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelayr1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10073 | I | Emergency Brake Train Line | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10074 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 8 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10075 | A | Force [NI] Dev4/5 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10076 | A | Force [TT] (MPU1)lo_ubk_tc1emergbraker1 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |

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| 10077 | A | Press and hold the Dead Man pushbutton 60S3 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10078 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc1ebdeadmanrelay1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10079 | A | Ensure the Master Controller S3.3 (3.4) is NOT in Emergency Brake position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10080 | I | Emergency Brake ERTMS1 Train Line Dev4/88 = END2 90XP14 pin 18 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10081 | A | Force [NI] Dev4/88 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10082 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1emergrelay1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10083 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1emergrelay2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10084 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelay1 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10085 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelay2 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10086 | I | Emergency Brake ERTMS2 Train Line Dev4/80 = END2 90XP14 pin 20 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10087 | A | Force [NI] Dev4/80 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10088 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1emergrelay1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10089 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1emergrelay2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10090 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelay1 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10091 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1rearmebrelay2 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10092 | I | Emergency Brake Train Line Dev2/84 = coupler pin 038 Dev2/85 = coupler pin 138 Dev5/61 = END2 90XP15 pin 67 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10093 | R | Read Defined Variable [NI] Dev2/84 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10094 | R | Read Defined Variable [NI] Dev2/85 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10095 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |

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| 10096 | R | Check that the Emergency Brake Loop Lamp 44H4 is OFF | EB | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10097 | A | Measure the voltage across Resistor 44R1 between pins 8A and 8B of terminal block 93XT202 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10098 | R | Battery Voltage (above 80Vdc) is measured across Resistor 44R1 between pins 8A and 8B of terminal block 93XT202 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10099 | R | Read Defined Variable [TT] (BCU1)LI_NEB = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10100 | A | Force [TT] (MPU1)lo_ubk_tc1emergbraker1 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10101 | I | Emergency Brake Train Line Dev2/84 = coupler pin 038 Dev2/85 = coupler pin 138 Dev5/61 = END2 90XP15 pin 67 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10102 | R | Read Defined Variable [NI] Dev2/84 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10103 | R | Read Defined Variable [NI] Dev2/85 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10104 | R | Read Defined Variable [NI] Dev5/61 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10105 | R | Check that the Emergency Brake Loop Lamp 44H4 is ON | EB | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10106 | A | Force [TT] (MPU1)lo_ubk_tc1emergbraker2 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10107 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10108 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10109 | A | Release the Dead Man pushbutton 60S3 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10110 | I | Emergency Brake ERTMS1 Train Line Dev4/88 = END2 90XP14 pin 18 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10111 | A | Force [NI] Dev4/88 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10112 | I | Emergency Brake ERTMS2 Train Line Dev4/80 = END2 90XP14 pin 20 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10113 | A | Force [NI] Dev4/80 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10114 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |

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| 10115 | R | Read Defined Variable [NI] Dev5/61 = 0.0 | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10116 | A | Turn the ERTMS Isolation switch 62S1 to "Isolation" position | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10117 | A | Turn the Dead Man Override switch 60S1 to "Override" position | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10118 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10119 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10120 | I | Emergency Brake Pushbutton | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10121 | A | Push the Emergency Brake Mushroom 44S1 | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10122 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10123 | R | Read Defined Variable [NI] Dev5/61 = 0.0 | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10124 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1emgcybrkpr1 = 1.0 | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10125 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1emgcybrkpr2 = 1.0 | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10126 | A | Check continuity between 93XT104_5 pin 36 and 93XT103 pin 28 | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10127 | A | The points are continuous | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10128 | A | Release the Emergency Brake Mushroom 44S1 | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10129 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1emgcybrkpr1 = 0.0 | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10130 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1emgcybrkpr2 = 0.0 | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10131 | A | Force [TT] (MPU1)lo_ubk_tc1emergbraker2 = 0.0 | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10132 | A | Return the Dead Man Override switch 60S1 to "Normal" position | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10133 | A | Return the ERTMS Isolation switch 62S1 to "Normal" position | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10134 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 8 | OK | | Sizwe Sibanyoni - 484647 | TC1 |

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| 10135 | A | Force [NI] Dev4/5 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10136 | A | Turn the Emergency Braking Loop Override Switch 44S2 to "Override/Bypass" position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10137 | A | Press and hold the Dead Man pushbutton 60S3 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10138 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10139 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10140 | A | Release the Dead Man pushbutton 60S3 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10141 | A | Return the Emergency Braking Loop Override Switch 44S2 to "Normal" position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10142 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10143 | I | Emergency Brake Train Line Dev4/61 = END2 90XP15 pin 67 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10144 | A | Force [NI] Dev4/61 = 1.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10145 | A | Measure the voltage on terminal block 93XT104_2 at pin 34, and pin 35 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10146 | R | Battery voltage (above 80Vdc) measured on terminal block 93XT104_2 at pin 34, and pin 35 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10147 | I | Emergency Brake Train Line Dev4/61 = END2 90XP15 pin 67 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10148 | A | Force [NI] Dev4/61 = 0.0 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10149 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10150 | I | Return the Direction Switch 30A1.S2 to "Neutral" position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10151 | I | PEA Loop | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10152 | A | Check all the Passenger Emergency Alarm handles, and ensure they are connected to their respective connectors | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10153 | R | All the PEAs are installed and connected | | OK | | Sizwe Sibanyoni - 484647 | TC1 |

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| 10154 | A | Open and Close (Reset) Circuit breaker 20Q2 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10155 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 Dev2/59 = coupler pin 117 Dev5/62 = END2 90XP15 pin 95 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10156 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Paseka Dithakanyane - 491468 | TC1 |
| 10157 | R | Read Defined Variable [NI] Dev2/59 = 1.0 | | OK | 1 | Paseka Dithakanyane - 491468 | TC1 |
| 10158 | R | Read Defined Variable [NI] Dev5/62 = 1.0 | | OK | 1 | Paseka Dithakanyane - 491468 | TC1 |
| 10159 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10160 | R | Check that the PEA Lamp 44H1 is ON |  | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10161 | I | PEA Loop Train Lines Dev5/62 = END2 90XP15 pin 95 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10162 | R | Read Defined Variable [NI] Dev5/62 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10163 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1pealoo = 1.0 | | OK | 1 | Sizwe Sibanyoni - 484647 | TC1 |
| 10164 | I | PEA Loop OTDR Train Line Dev5/7 = END2 90XP14 pin 10 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10165 | R | Read Defined Variable [NI] Dev5/7 = 0.0 | | OK | 0 | Sizwe Sibanyoni - 484647 | TC1 |
| 10166 | I | PEA Loop Train Lines Dev4/62 = END2 90XP15 pin 95 | | OK | | Sizwe Sibanyoni - 484647 | TC1 |
| 10167 | A | Force [NI] Dev4/62 = 1.0 | | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10168 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10169 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Paseka Dithakanyane - 491468 | TC1 |
| 10170 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1pealoo = 0.0 | | OK | 0 | Paseka Dithakanyane - 491468 | TC1 |
| 10171 | I | PEA Loop OTDR Train Line Dev5/7 = END2 90XP14 pin 10 | | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10172 | R | Read Defined Variable [NI] Dev5/7 = 1.0 | | OK | 1 | Paseka Dithakanyane - 491468 | TC1 |
| 10173 | R | Check that the PEA Lamp 44H1 is OFF |  | OK | | Paseka Dithakanyane - 491468 | TC1 |
| 10174 | I | PEA Reset | | OK | | Paseka Dithakanyane - 491468 | TC1 |

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| 10175 | A | Activate the PEA on door 1 (44S11) | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10176 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10177 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10178 | R | Read Defined Variable [TT] (MPU1)Li_UBK_Tc1StateResetPea = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10179 | A | Turn and hold the PEA Reset Switch 44S6 in Reset position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10180 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1restpeaswitch = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10181 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc1resetpea = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10182 | R | Read Defined Variable [TT] (MPU1)Li_UBK_Tc1StateResetPea = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10183 | A | Release the PEA Reset Switch 44S6 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10184 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1restpeaswitch = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10185 | A | Timer 5.0 S | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10186 | R | Read Defined Variable [TT] (MPU1)Li_UBK_Tc1StateResetPea = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10187 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc1resetpea = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10188 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10189 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10190 | A | Activate the PEA on door 2 (44S12) | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10191 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10192 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10193 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10194 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10195 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |

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| 10196 | A | Activate the PEA on door 3 (44S13) | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10197 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10198 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10199 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10200 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10201 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10202 | A | Activate the PEA on door 4 (44S14) | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10203 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10204 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10205 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10206 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10207 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10208 | A | Activate the PEA on door 5 (44S15) | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10209 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10210 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10211 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10212 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10213 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10214 | A | Activate the PEA on door 6 (44S16) | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10215 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10216 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |

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|-------|---|---|--|----|---|-------------------------------|-----|
| 10217 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10218 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10219 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10220 | I | PEA Loop Train Lines Dev4/64 = END2 90XP15 pin 95 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10221 | A | Force [NI] Dev4/62 = 0.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10222 | I | PEA Override | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10223 | A | Press and hold the Override PEA pushbutton 44S5 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10224 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1peaoverridebuttr1 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10225 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1peaoverridebuttr2 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10226 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc1peaoverrider1 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10227 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc1peaoverrider2 = 1.0 | | OK | 1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10228 | R | Check that the Override PEA pushbutton lamp 44S5 turns ON | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10229 | A | Release the Override PEA pushbutton 44S5 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10230 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1peaoverridebuttr1 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10231 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1peaoverridebuttr2 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10232 | A | Force [TT] (MPU1)lo_ubk_tc1peaoverrider1 = 0.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10233 | A | Force [TT] (MPU1)lo_ubk_tc1peaoverrider2 = 0.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10234 | R | Check that the Override PEA pushbutton lamp 44S5 turns OFF | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |



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| 10235 | I | END OF TEST | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
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Section 12 – Service Brake

12.1 Instructions list

12.1.1 040_SBK-Service Brake

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|------------------------------------|---------|
| 10001 | I | Service Brake (SPP = 040) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10002 | I | Initial Conditions | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10003 | I | No air supply to the vehicle - pressure in tank <6Bar | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10004 | I | All brake panel cocks are in normal position (not isolated) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10005 | I | The Service Brake Isolation Switch 40S2 should be in Normal position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10006 | I | Circuit Breakers | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10007 | A | Close Circuit Breaker 40Q2 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10008 | A | Close Circuit Breaker 40Q3 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10009 | A | Close Circuit Breaker 40Q4 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10010 | A | Close Circuit Breaker 40Q5 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10011 | I | Brake Air Supply and Brake Application | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10012 | I | EB Reduced Train Lines Dev2/78 = Coupler pin 031 Dev2/81 = Coupler pin 131 Dev5/51 = END2 90XP15 pin 60 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10013 | R | Read Defined Variable [NI] Dev2/78 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10014 | R | Read Defined Variable [NI] Dev2/81 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10015 | R | Read Defined Variable [NI] Dev5/51 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10016 | I | Brake Applied Train Lines Dev2/36 = Coupler pin 010 Dev2/37 = Coupler pin 110 Dev5/49 = END2 90XP15 pin 50 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10017 | R | Read Defined Variable [NI] Dev2/36 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10018 | R | Read Defined Variable [NI] Dev2/37 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |

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| 10019 | R | Read Defined Variable [NI] Dev5/49 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10020 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc1brakeairsuppokr1 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10021 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc1brakeairsuppokr2 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10022 | R | Read Defined Variable [TT] (BCU1)LI_BRPS_NOK = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10023 | R | Read Defined Variable [TT] (BCU1)LI_BRAKE_NOT_APPLIED = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10024 | R | The Reduced Brake Lamp 40H2 on the indicator module 84A1 is ON |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10025 | A | Close/Isolate the coupler Isolation cock F2.1/1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10026 | A | Open the Isolation cock F2.2/1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10027 | A | Connect the air supply to the vehicle main pipe coupling flexible hose F3/1, and switch the supply ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10028 | I | Take note of any air leaks in the pipes or valves | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10029 | A | Allow the pressure to go above 6 bar. The pressure can be checked at the BRTP test point | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10030 | R | BRTP pressure is measured >=6 Bar | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10031 | I | EB Reduced Train Lines Dev2/78 = Coupler pin 031 Dev2/81 = Coupler pin 131 Dev5/51 = END2 90XP15 pin 60 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10032 | R | Read Defined Variable [NI] Dev2/78 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10033 | R | Read Defined Variable [NI] Dev2/81 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10034 | R | Read Defined Variable [NI] Dev5/51 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10035 | I | Brake Applied Train Lines Dev2/36 = Coupler pin 010 Dev2/37 = Coupler pin 110 Dev5/49 = END2 90XP15 pin 50 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10036 | R | Read Defined Variable [NI] Dev2/36 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10037 | R | Read Defined Variable [NI] Dev2/37 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |

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|-------|---|---|---|----|---|---------------------------------|-----|
| 10038 | R | Read Defined Variable [NI] Dev5/49 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10039 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc1brakeairsuppokr1 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10040 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc1brakeairsuppokr2 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10041 | R | Read Defined Variable [TT] (BCU1)LI_BRPS_NOK = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10042 | R | Read Defined Variable [TT] (BCU1)LI_BRAKE_NOT_APPLIED = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10043 | R | The Reduced Brake Lamp 40H2 on the indicator module 84A1 is OFF |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10044 | A | Put the Master controller in 100% Traction position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10045 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10046 | A | Force [NI] Dev4/38 = 1.0 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10047 | R | Lamp 40H1 on the indicator module 84A1 is ON |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10048 | A | Return the Master controller to Normal position (Coasting) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10049 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10050 | A | Force [NI] Dev4/38 = 0.0 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10051 | R | Lamp 40H1 on the Indicator module 84A1 is OFF |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10052 | I | Remote Isolation | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10053 | A | Turn the key 30A1.S1 to Non-active cab position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10054 | R | Read Defined Variable [TT] (BCU1)LI_BRAKE_ISO = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10055 | I | Remote Isolation Train Lines Dev4/50 = END2 90XP15 pin 59 Dev2/38 = Coupler pin 025 Dev2/39 = Coupler pin 125 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10056 | A | Force [NI] Dev4/50 = 1.0 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |

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| 10057 | R | Read Defined Variable [NI] Dev2/38 = 1.0 | OK | 1 | Ntobeko Ndlovu - 421595 | TC1 |
| 10058 | R | Read Defined Variable [NI] Dev2/39 = 1.0 | OK | 1 | Ntobeko Ndlovu - 421595 | TC1 |
| 10059 | I | Remote Isolation Train Lines Dev4/50 = END2 90XP15 pin 59 Dev2/38 = Coupler pin 025 Dev2/39 = Coupler pin 125 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10060 | A | Force [NI] Dev4/50 = 0.0 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10061 | R | Read Defined Variable [NI] Dev2/38 = 0.0 | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10062 | R | Read Defined Variable [NI] Dev2/39 = 0.0 | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10063 | A | Turn the key 30A1.S1 to Active cab position | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10064 | A | Turn the Service Brake Isolation Switch 40S2 to Isolation position | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc1remoteisoswitchr1 = 1.0 | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc1remoteisoswitchr2 = 1.0 | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10067 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10068 | R | Read Defined Variable [NI] Dev5/51 = 1.0 | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10069 | A | Force [TT] (MPU1)lo_sbk_tc1isobrake = 1.0 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10070 | R | Read Defined Variable [TT] (BCU1)LI_BRAKE_ISO = 0.0 | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10071 | I | Remote Isolation Train Lines Dev5/50 = END2 90XP15 pin 59 Dev2/39 = Coupler pin 125 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10072 | R | Read Defined Variable [NI] Dev2/39 = 1.0 | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10073 | R | Read Defined Variable [NI] Dev5/50 = 0.0 | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10074 | R | The Remote Isolation relay valve C1.1_SERC is actuated, and the service brake is isolated (confirm that air is released from the valve) | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10075 | A | Release [TT] (MPU1)lo_sbk_tc1isobrake | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |

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|-------|---|--|--|----|---|------------------------------------|-----|
| 10076 | A | Turn the Service Brake Isolation Switch 40S2 to Normal position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10077 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10078 | R | Read Defined Variable [NI] Dev5/51 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10079 | I | Manual Isolation | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10080 | A | Turn the Manual Isolation Cock C1.3.1 to Isolated position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10081 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10082 | R | Read Defined Variable [NI] Dev5/51 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10083 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc1servicebrakedc = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10084 | R | Read Defined Variable [TT] (BCU1)LI_SERVICE_BR_DC = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10085 | A | Turn the Manual Isolation Cock C1.3.1 to Normal position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10086 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10087 | R | Read Defined Variable [NI] Dev5/51 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10088 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc1servicebrakedc = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10089 | R | Read Defined Variable [TT] (BCU1)LI_SERVICE_BR_DC = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10090 | I | MCE Fault | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10091 | A | Force [TT] (BCU1)LO_BRK_FLT = 1.0 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10092 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc1bcufault = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10093 | A | Force [TT] (BCU1)LO_BRK_FLT = 0.0 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10094 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc1bcufault = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10095 | A | Release [TT] (BCU1)LO_BRK_FLT | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10096 | I | Speed sensor TC1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |

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|-------|---|---|--|----|---|---------------------------------|-----|
| 10097 | A | All connectors from speed sensor (one per axle) are connected to its axle in TC1 car. | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10098 | R | Read Defined Variable [TT] (MPU1)bcu1_bcuspdswsp1flt = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10099 | R | Read Defined Variable [TT] (MPU1)bcu1_bcuspdswsp2flt = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10100 | R | Read Defined Variable [TT] (MPU1)bcu1_bcuspdswsp3flt = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10101 | R | Read Defined Variable [TT] (MPU1)bcu1_bcuspdswsp4flt = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10102 | I | End of test | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |



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RTR Vehicle Functional Static Testing Report

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Version: A0

Emission date
11/11/2024

Section 13 – Holding and Parking Brake

13.1 Instructions list

13.1.1 045_PBK-Holding and Parking Brake

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|---------------------------------|---------|
| 10001 | I | Holding and Parking Brake (SPP = 045) | | OK | | Philemon Milani - 484650 | TC1 |
| 10002 | I | Initial Conditions | | OK | | Philemon Milani - 484650 | TC1 |
| 10003 | A | Using the tools list on the side of your screen, record the serial number of the manometer that will be used during this test | | OK | | Philemon Milani - 484650 | TC1 |
| 10004 | I | Confirm the presence of air supply to the vehicle. The pressure can be checked at test point BRTP > 4.8 Bar | | OK | | Philemon Milani - 484650 | TC1 |
| 10005 | I | Ensure that the Parking Brake Switch 45S1 is in "Normal" position | | OK | | Philemon Milani - 484650 | TC1 |
| 10006 | I | Parking Brake Pressure Switch | | OK | | Philemon Milani - 484650 | TC1 |
| 10007 | A | Turn the key 30A1.S1 to Active cab position | | OK | | Philemon Milani - 484650 | TC1 |
| 10008 | R | Check that the pressure on test point C1.11/1 is >4.8 Bar Result Min : 4.8<= x () | | OK | 5 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10009 | R | Read Defined Variable [TT] (BCU1)LI_PARK_BR_RELEASE = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10010 | R | Read Defined Variable [TT] (BCU1)LI_PARK_BR_DC = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10011 | R | Read Defined Variable [TT] (MPU1)bcu1_parkbrakerelease = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10012 | R | Read Defined Variable [TT] (MPU1)bcu1_parkbrakeisoldc = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10013 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77 | | OK | | Philemon Milani - 484650 | TC1 |
| 10014 | R | Read Defined Variable [NI] Dev2/74 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10015 | R | Read Defined Variable [NI] Dev2/49 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10016 | R | Read Defined Variable [NI] Dev5/58 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |

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|-------|---|--|---|----|---|---------------------------------|-----|
| 10017 | R | Check that the Parking Brake Applied Lamp 45H2 on the indicator module 84A1 is OFF |  | OK | | Philemon Milani - 484650 | TC1 |
| 10018 | I | Remote Parking Brake Command | | OK | | Philemon Milani - 484650 | TC1 |
| 10019 | A | Turn the Parking Brake Switch 45S1 to "Parking Brake" position | | OK | | Philemon Milani - 484650 | TC1 |
| 10020 | R | Confirm that the parking brake is applied, and air is released from electro valve C1.5 | | OK | | Philemon Milani - 484650 | TC1 |
| 10021 | I | Remote Parking Brake Command Train lines Dev2/86 = Coupler pin 030 Dev2/87 = Coupler pin 130 Dev5/57 = END2 90XP15 pin 68 | | OK | | Philemon Milani - 484650 | TC1 |
| 10022 | R | Read Defined Variable [NI] Dev2/86 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10023 | R | Read Defined Variable [NI] Dev2/87 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10024 | R | Read Defined Variable [NI] Dev5/57 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10025 | A | Allow the air to reach below 4.8 Bar - verify on test point C1.11/1 | | OK | | Philemon Milani - 484650 | TC1 |
| 10026 | R | Read Defined Variable [TT] (BCU1)LI_PARK_BR_RELEASE = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10027 | R | Read Defined Variable [TT] (MPU1)bcu1_parkbrakerelease = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10028 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77 | | OK | | Philemon Milani - 484650 | TC1 |
| 10029 | R | Read Defined Variable [NI] Dev2/74 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10030 | R | Read Defined Variable [NI] Dev2/49 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10031 | R | Read Defined Variable [NI] Dev5/58 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10032 | R | Check that the Parking Brake Applied Lamp 45H2 on the indicator module 84A1 turns ON |  | OK | | Philemon Milani - 484650 | TC1 |
| 10033 | A | Turn the Parking Brake Switch 45S1 to "Normal" position | | OK | | Philemon Milani - 484650 | TC1 |
| 10034 | I | Remote Parking Brake Command Train lines Dev2/86 = Coupler pin 030 Dev2/87 = Coupler pin 130 | | OK | | Philemon Milani - 484650 | TC1 |

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|-------|---|---|----|---|---------------------------------|-----|--|
| | | Dev5/57 = END2 90XP15 pin 68 | | | | | |
| 10035 | R | Read Defined Variable [NI] Dev2/86 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 | |
| 10036 | R | Read Defined Variable [NI] Dev2/87 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 | |
| 10037 | R | Read Defined Variable [NI] Dev5/57 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 | |
| 10038 | I | Parking Brake Manual Isolation | OK | | Philemon Milani - 484650 | TC1 | |
| 10039 | A | Turn the Parking Brake Isolation cock C1.3.2 to "Isolated" position | OK | | Philemon Milani - 484650 | TC1 | |
| 10040 | R | Read Defined Variable [TT] (BCU1)LI_PARK_BR_DC = 1.0 | OK | 1 | Philemon Milani - 484650 | TC1 | |
| 10041 | R | Read Defined Variable [TT] (MPU1)bcu1_parkbrakeisoldc = 1.0 | OK | 1 | Philemon Milani - 484650 | TC1 | |
| 10042 | R | Read Defined Variable [TT] (MPU1)li_pbk_tc1parkbrakeisol = 1.0 | OK | 1 | Philemon Milani - 484650 | TC1 | |
| 10043 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77 | OK | | Philemon Milani - 484650 | TC1 | |
| 10044 | R | Read Defined Variable [NI] Dev2/74 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 | |
| 10045 | R | Read Defined Variable [NI] Dev2/49 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 | |
| 10046 | R | Read Defined Variable [NI] Dev5/58 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 | |
| 10047 | A | Return the Parking Brake Isolation cock C1.3.2 to "Normal" position | OK | | Philemon Milani - 484650 | TC1 | |
| 10048 | R | Read Defined Variable [TT] (BCU1)LI_PARK_BR_DC = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 | |
| 10049 | R | Read Defined Variable [TT] (MPU1)bcu1_parkbrakeisoldc = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 | |
| 10050 | R | Read Defined Variable [TT] (MPU1)li_pbk_tc1parkbrakeisol = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 | |
| 10051 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 | OK | | Philemon Milani - 484650 | TC1 | |
| 10052 | R | Read Defined Variable [NI] Dev2/74 = 1.0 | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 | |
| 10053 | I | END OF TEST | OK | | Philemon Milani - 484650 | TC1 | |



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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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Section 14 – Passenger Doors

14.1 Instructions list

14.1.1 050_DOR-Passenger Doors

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|--------------------------|---------|
| 10001 | I | Passenger Doors (SPP=050) | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10002 | I | Initial Conditions: | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10003 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10004 | I | Car Should be Prepared (closed battery contacts) | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10005 | I | Cab door windows should be closed | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10006 | I | Cab doors should be closed and unlocked | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10007 | I | Cab Door Windows | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10008 | A | Open and close both the LEFT and RIGHT cab door windows | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10009 | R | The LEFT cab door window opens and closes correctly | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10010 | R | The RIGHT cab door window opens and closes correctly | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10011 | I | Cabin Doors | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10012 | A | Open all 3 cab doors (LEFT, RIGHT, and saloon access) and close them | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10013 | R | The LEFT cab door can open fully and close shut | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10014 | R | The RIGHT cab door can open fully and close shut | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10015 | R | The saloon access door can open fully and close shut | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10016 | A | Lock the 3 doors with their respective keys | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10017 | R | The LEFT cab door is locked, the lock is functioning correctly, and the door cannot be opened | | OK | | Anthonia Mabowa - 494131 | TC1 |

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|-------|---|--|--|----|--|--------------------------|-----|
| 10018 | R | The RIGHT cab door is locked, the lock is functioning correctly, and the door cannot be opened | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10019 | R | The Saloon access door is locked, the lock is functioning correctly, and the door cannot be opened | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10020 | A | Unlock the doors with their respective keys | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10021 | A | Repeat the open, close and lock operations from the outside of the vehicle | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10022 | R | Both cab doors can be opened, closed and locked from the outside | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10023 | I | External access locks | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10024 | I | Ensure Door 1 and Door 2 are closed | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10025 | A | Insert a square key into the external access lock of Door 1, and unlock the door | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10026 | A | The door is unlocked and can be opened freely. | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10027 | A | Close the door, and lock the external access lock with the square key | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10028 | R | The door is locked and can no longer be opened manually | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10029 | A | Insert a square key into the external access lock of Door 2, and unlock the door | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10030 | R | The door is unlocked and can be opened freely | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10031 | A | Close the door, and lock the external access lock with the square key | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10032 | R | The door is locked and can no longer be opened manually | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10033 | I | Circuit Breakers | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10034 | A | Close Circuit Breaker 50Q1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10035 | R | DCU 1 is powered ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10036 | R | Check on the DDU that DCU1 is online | | OK | | Anthonia Mabowa - 494131 | TC1 |

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|-------|---|--|---|----|--|--------------------------|-----|
| 10037 | A | Close Circuit Breaker 50Q2 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10038 | R | DCU 2 is powered ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10039 | R | Check on the DDU that DCU2 is online | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10040 | A | Close Circuit Breaker 50Q3 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10041 | R | DCU 3 is powered ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10042 | R | Check on the DDU that DCU3 is online | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10043 | A | Close Circuit Breaker 50Q4 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10044 | R | DCU 4 is powered ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10045 | R | Check on the DDU that DCU4 is online | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10046 | A | Close Circuit Breaker 50Q5 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10047 | R | DCU 5 is powered ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10048 | R | Check on the DDU that DCU5 is online | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10049 | A | Close Circuit Breaker 50Q6 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10050 | R | DCU 6 is powered ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10051 | R | Check on the DDU that DCU6 is online | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10052 | A | Close Circuit Breaker 50Q7 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10053 | I | Car ID Code | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10054 | A | Using the Door Status screen on the DDU, check that all the doors on TC1 are available - as in the picture below |  | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10055 | R | All doors are available | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10056 | I | Left Side Doors | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10057 | I | Ensure that all doors are CLOSED before proceeding to the next steps | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10058 | I | Door Authorization | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10059 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10060 | A | Force [NI] Dev4/39 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |

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|-------|---|--|--|----|---|--------------------------|-----|
| 10061 | A | Switch Door Authorization Selector 50S7 to DRIVER | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10062 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1ertmsauthdoor1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10063 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1ertmsauthdoor2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10064 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1authdoorpbleft = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdlefr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdlefr2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10067 | I | Door Auth Left Train Lines Dev2/56 = Coupler pin 009 Dev2/57 = Coupler pin 124 Dev5/64 = END2 90XP15 pin 85 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10068 | R | Read Defined Variable [NI] Dev2/56 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10069 | R | Read Defined Variable [NI] Dev2/57 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10070 | R | Read Defined Variable [NI] Dev5/64 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10071 | A | Press the Doors LEFT Side Authorization button 50S5 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10072 | R | Check that the YELLOW LEFT Side Authorization pushbutton lamp 50S5 turns ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10073 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1authdoorpbleft = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10074 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdlefr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10075 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdlefr2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10076 | I | Door Auth Left Train Lines Dev2/56 = Coupler pin 009 Dev2/57 = Coupler pin 124 Dev5/64 = END2 90XP15 pin 85 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10077 | R | Read Defined Variable [NI] Dev2/56 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10078 | R | Read Defined Variable [NI] Dev2/57 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10079 | R | Read Defined Variable [NI] Dev5/64 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |

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|-------|---|--|--|----|---|--------------------------|-----|
| 10080 | A | Turn Driver's Master Key 30A1.S1 to NON-Active Cabin Position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10081 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdlefr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10082 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10083 | I | Door Open | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10084 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorplefr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10085 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorplefr2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10086 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtlefr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10087 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtlefr2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10088 | A | Press and hold the LEFT side Door Open pushbutton 50S1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10089 | R | Check that the WHITE LEFT Side Door Open pushbutton lamp 50S1 turns ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10090 | R | Check that door 1, 3 and 5 (LEFT SIDE) open | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10091 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorleft = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10092 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorplefr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10093 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorplefr2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10094 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtlefr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10095 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtlefr2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10096 | A | Release the LEFT side Door Open pushbutton 50S1 | | OK | | Anthonia Mabowa - 494131 | TC1 |

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|-------|---|---|--|----|---|--------------------------|-----|
| 10097 | I | Door Closing | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10098 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpleftr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10099 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpleftr2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10100 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtlefr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10101 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtlefr2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10102 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorlineleft = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10103 | I | Door Close Left Train Lines Dev2/50 = Coupler pin 004 Dev2/51 = Coupler pin 137 Dev5/60 = END2 90XP15 pin 79 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10104 | R | Read Defined Variable [NI] Dev2/50 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10105 | R | Read Defined Variable [NI] Dev2/51 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10106 | R | Read Defined Variable [NI] Dev5/60 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10107 | A | Press and hold the LEFT side Door Close pushbutton 50S3 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10108 | R | Check that the BLUE LEFT Side Door Close pushbutton lamp 50S3 turns ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10109 | R | Check that door 1, 3 and 5 (LEFT SIDE) close | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10110 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpleftr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10111 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpleftr2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10112 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtlefr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10113 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtlefr2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10114 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorlineleft = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |

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|-------|---|---|----|---|--|--------------------------|-----|
| 10115 | I | Door Close Left Train Lines Dev2/50 = Coupler pin 004 Dev2/51 = Coupler pin 137 Dev5/60 = END2 90XP15 pin 79 | OK | | | Anthonia Mabowa - 494131 | TC1 |
| 10116 | R | Read Defined Variable [NI] Dev2/50 = 1.0 | OK | 1 | | Anthonia Mabowa - 494131 | TC1 |
| 10117 | R | Read Defined Variable [NI] Dev2/51 = 1.0 | OK | 1 | | Anthonia Mabowa - 494131 | TC1 |
| 10118 | R | Read Defined Variable [NI] Dev5/60 = 1.0 | OK | 1 | | Anthonia Mabowa - 494131 | TC1 |
| 10119 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthlefr1 = 1.0 | OK | 1 | | Anthonia Mabowa - 494131 | TC1 |
| 10120 | A | Release the LEFT side Door Close pushbutton 50S3 | OK | | | Anthonia Mabowa - 494131 | TC1 |
| 10121 | I | Right Side Doors | OK | | | Anthonia Mabowa - 494131 | TC1 |
| 10122 | I | Door Authorization | OK | | | Anthonia Mabowa - 494131 | TC1 |
| 10123 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1authdoorpbright = 0.0 | OK | 0 | | Anthonia Mabowa - 494131 | TC1 |
| 10124 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthrightr1 = 1.0 | OK | 1 | | Anthonia Mabowa - 494131 | TC1 |
| 10125 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthrightr2 = 1.0 | OK | 1 | | Anthonia Mabowa - 494131 | TC1 |
| 10126 | I | Door Auth Right Train Lines Dev2/54 = Coupler pin 024 Dev2/64 = Coupler pin 109 Dev5/56 = END2 90XP15 pin 84 | OK | | | Anthonia Mabowa - 494131 | TC1 |
| 10127 | R | Read Defined Variable [NI] Dev2/54 = 0.0 | OK | 0 | | Anthonia Mabowa - 494131 | TC1 |
| 10128 | R | Read Defined Variable [NI] Dev2/64 = 0.0 | OK | 0 | | Anthonia Mabowa - 494131 | TC1 |
| 10129 | R | Read Defined Variable [NI] Dev5/56 = 0.0 | OK | 0 | | Anthonia Mabowa - 494131 | TC1 |
| 10130 | A | Press and hold the Doors RIGHT Side Authorization button 50S6 | OK | | | Anthonia Mabowa - 494131 | TC1 |
| 10131 | R | Check that the YELLOW RIGHT Side Authorization pushbutton lamp 50S6 turns ON | OK | | | Anthonia Mabowa - 494131 | TC1 |
| 10132 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1authdoorpbright = 1.0 | OK | 1 | | Anthonia Mabowa - 494131 | TC1 |
| 10133 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthrightr1 = 0.0 | OK | 0 | | Anthonia Mabowa - 494131 | TC1 |

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| 10134 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdrihtr2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10135 | I | Door Auth Right Train Lines Dev2/54 = Coupler pin 024 Dev2/64 = Coupler pin 109 Dev5/56 = END2 90XP15 pin 84 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10136 | R | Read Defined Variable [NI] Dev2/54 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10137 | R | Read Defined Variable [NI] Dev2/64 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10138 | R | Read Defined Variable [NI] Dev5/56 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10139 | A | Release the Doors RIGHT Side Authorization button 50S6 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10140 | A | Turn Driver's Master Key 30A1.S1 to NON-Active Cabin Position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10141 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdrihtr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10142 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10143 | I | Door Open | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10144 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbright1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10145 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbright2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10146 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgrightr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10147 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgrightr2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10148 | A | Press and hold the right-side Door Open pushbutton 50S2 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10149 | R | Check that the WHITE right-side Door Open pushbutton lamp 50S2 turns ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10150 | R | Check that door 2, 4 and 6 (RIGHT SIDE) open | | OK | | Anthonia Mabowa - 494131 | TC1 |

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| 10151 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorright = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10152 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbright1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10153 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1opendoorpbright2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10154 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtright1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10155 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1opendoorlgtright2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10156 | A | Release the right-side Door Open pushbutton 50S2 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10157 | I | Door Closing | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10158 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbright1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10159 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbright2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10160 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtright1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10161 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgtright2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10162 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorlineright = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10163 | I | Door Close Right Train Lines Dev2/52 = Coupler pin 037 Dev2/53 = Coupler pin 104 Dev5/59 = END2 90XP15 pin 78 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10164 | R | Read Defined Variable [NI] Dev2/52 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10165 | R | Read Defined Variable [NI] Dev2/53 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10166 | R | Read Defined Variable [NI] Dev5/59 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |

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| 10167 | A | Press and hold the right-side Door Close pushbutton 50S4 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10168 | R | Check that the BLUE RIGHT Side Door Close pushbutton lamp 50S4 turns ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10169 | R | Check that door 2, 4 and 6 (RIGHT SIDE) close | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10170 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbrightr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10171 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorpbrightr2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10172 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgrightr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10173 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc1closedoorlgrightr2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10174 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1closedoorlineright = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10175 | I | Door Close Right Train Lines Dev2/52 = Coupler pin 037 Dev2/53 = Coupler pin 104 Dev5/59 = END2 90XP15 pin 78 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10176 | R | Read Defined Variable [NI] Dev2/52 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10177 | R | Read Defined Variable [NI] Dev2/53 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10178 | R | Read Defined Variable [NI] Dev5/59 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10179 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1doorauthdrihtr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10180 | A | Release the right-side Door Close pushbutton 50S4 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10181 | I | Closing Conditions | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10182 | A | Press the Doors LEFT Side Authorization button 50S5 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10183 | I | Door Close Left Train Line Dev5/60 = END2 90XP15 pin 79 | | OK | | Anthonia Mabowa - 494131 | TC1 |

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| 10184 | R | Read Defined Variable [NI] Dev5/60 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10185 | A | Press the Doors right-side Authorization button 50S6 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10186 | I | Door Close Right Train Lines Dev5/59 = END2 90XP15 pin 78 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10187 | R | Read Defined Variable [NI] Dev5/59 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10188 | A | Press the LEFT side Door Open pushbutton 50S1 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10189 | A | Press the right-side Door Open pushbutton 50S2 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10190 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10191 | A | Force [NI] Dev4/38 = 1.0 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10192 | R | Read Defined Variable [TT] (MPU1)li_rec_tc1thresholdfive1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10193 | R | Read Defined Variable [TT] (MPU1)li_rec_tc1thresholdfive2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10194 | I | Door Close Left Train Line Dev5/60 = END2 90XP15 pin 79 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10195 | R | Read Defined Variable [NI] Dev5/60 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10196 | I | Door Close Right Train Lines Dev5/59 = END2 90XP15 pin 78 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10197 | R | Read Defined Variable [NI] Dev5/59 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10198 | R | Check that all the Doors Close | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10199 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10200 | A | Force [NI] Dev4/38 = 0.0 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10201 | R | Read Defined Variable [TT] (MPU1)li_rec_tc1thresholdfive1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10202 | R | Read Defined Variable [TT] (MPU1)li_rec_tc1thresholdfive2 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10203 | I | ERTMS Control | OK | | Anthonia Mabowa - 494131 | TC1 |

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| 10204 | A | Switch Door Authorization Selector 50S7 to ERTMS | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10205 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1ertmsauthdoorr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10206 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1ertmsauthdoorr2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10207 | I | Left Doors | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10208 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10209 | A | Force [NI] Dev4/86 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10210 | R | Check that the YELLOW LEFT Side Authorization pushbutton lamp 50S5 turns ON | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10211 | A | Force [TT] (MPU1)lo_dor_tc1distertmsauthleftr1 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10212 | A | Force [TT] (MPU1)lo_dor_tc1distertmsauthleftr2 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10213 | A | Force [TT] (MPU1)lo_dor_tc1opendoorleft = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10214 | R | Check that door 1, 3 and 5 (LEFT SIDE) open | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10215 | A | Release [TT] (MPU1)lo_dor_tc1opendoorleft | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10216 | R | Check that door 1, 3 and 5 (LEFT SIDE) close | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10217 | A | Press the LEFT side Door Open pushbutton 50S1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10218 | R | Check that door 1, 3 and 5 (LEFT SIDE) open | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10219 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10220 | A | Force [NI] Dev4/86 = 0.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10221 | A | Press the LEFT side Door Close pushbutton 50S3 | | OK | | Anthonia Mabowa - 494131 | TC1 |

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| 10222 | R | Check that door 1, 3 and 5 (LEFT SIDE) close | OK | Anthonia Mabowa - 494131 | TC1 |
| 10223 | A | Release [TT] (MPU1)lo_dor_tc1distertmsauthlefr1 | OK | Anthonia Mabowa - 494131 | TC1 |
| 10224 | A | Release [TT] (MPU1)lo_dor_tc1distertmsauthlefr2 | OK | Anthonia Mabowa - 494131 | TC1 |
| 10225 | I | Right Doors | OK | Anthonia Mabowa - 494131 | TC1 |
| 10226 | I | ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47 | OK | Anthonia Mabowa - 494131 | TC1 |
| 10227 | A | Force [NI] Dev4/87 = 1.0 | OK | Anthonia Mabowa - 494131 | TC1 |
| 10228 | R | Check that the YELLOW RIGHT Side Authorization pushbutton lamp 50S6 turns ON | OK | Anthonia Mabowa - 494131 | TC1 |
| 10229 | A | Force [TT] (MPU1)lo_dor_tc1distertmsauthright1 = 1.0 | OK | Anthonia Mabowa - 494131 | TC1 |
| 10230 | A | Force [TT] (MPU1)lo_dor_tc1distertmsauthright2 = 1.0 | OK | Anthonia Mabowa - 494131 | TC1 |
| 10231 | A | Force [TT] (MPU1)lo_dor_tc1opendoorright = 1.0 | OK | Anthonia Mabowa - 494131 | TC1 |
| 10232 | R | Check that door 2, 4 and 6 (RIGHT SIDE) open | OK | Anthonia Mabowa - 494131 | TC1 |
| 10233 | A | Release [TT] (MPU1)lo_dor_tc1opendoorright | OK | Anthonia Mabowa - 494131 | TC1 |
| 10234 | R | Check that door 2, 4 and 6 (RIGHT SIDE) close | OK | Anthonia Mabowa - 494131 | TC1 |
| 10235 | A | Press the RIGHT side Door Open pushbutton 50S2 | OK | Anthonia Mabowa - 494131 | TC1 |
| 10236 | R | Check that door 2, 4 and 6 (RIGHT SIDE) open | OK | Anthonia Mabowa - 494131 | TC1 |
| 10237 | I | ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47 | OK | Anthonia Mabowa - 494131 | TC1 |
| 10238 | A | Force [NI] Dev4/87 = 0.0 | OK | Anthonia Mabowa - 494131 | TC1 |
| 10239 | A | Press the RIGHT side Door Close pushbutton 50S4 | OK | Anthonia Mabowa - 494131 | TC1 |

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| 10240 | R | Check that door 2, 4 and 6 (RIGHT SIDE) close | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10241 | A | Release [TT] (MPU1)lo_dor_tc1distertmsauthrightr1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10242 | A | Release [TT] (MPU1)lo_dor_tc1distertmsauthrightr2 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10243 | I | Opening Gap, Safety Loop and Obstacle Detection | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10244 | A | Close Circuit Breaker 51Q1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10245 | A | Check that the Door Safety Loop Indicator lamp 51H1 is ON |  | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10246 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1alldoorsclosedr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10247 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1alldoorsclosedr2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10248 | I | Safety Doors Loop Train Line Dev2/60 = Coupler pin 016 Dev2/61 = Coupler pin 116 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10249 | R | Read Defined Variable [NI] Dev2/60 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10250 | R | Read Defined Variable [NI] Dev2/61 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10251 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 Dev2/83 = Coupler pin 129 Dev5/55 = END2 90XP15 pin 66 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10252 | R | Read Defined Variable [NI] Dev2/82 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10253 | R | Read Defined Variable [NI] Dev2/83 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10254 | R | Read Defined Variable [NI] Dev5/55 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10255 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP25 pin 96 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10256 | A | Force [NI] Dev4/89 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10257 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1alldoorsclosedr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10258 | R | Read Defined Variable [TT] (MPU1)li_dor_tc1alldoorsclosedr2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10259 | I | Safety Doors Loop Train Line Dev2/60 = Coupler pin 016 | | OK | | Anthonia Mabowa - 494131 | TC1 |

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| | | Dev2/61 = Coupler pin 116 | | | | | |
| 10260 | R | Read Defined Variable [NI] Dev2/60 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10261 | R | Read Defined Variable [NI] Dev2/61 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10262 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 Dev2/83 = Coupler pin 129 Dev5/55 = END2 90XP15 pin 66 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10263 | R | Read Defined Variable [NI] Dev2/82 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10264 | R | Read Defined Variable [NI] Dev2/83 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10265 | R | Read Defined Variable [NI] Dev5/55 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10266 | A | Check that the Door Safety Loop Indicator lamp 51H1 is OFF |  | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10267 | I | Door 1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10268 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10269 | A | Force [NI] Dev4/86 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10270 | A | Force [TT] (MPU1)lo_dor_tc1distertmsauthlefr1 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10271 | A | Force [TT] (MPU1)lo_dor_tc1distertmsauthlefr2 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10272 | A | Force [TT] (MPU1)lo_dor_tc1opendoorleft = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10273 | R | Check if ALL Left doors opens in 3 sec (+1/-0) | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10274 | R | Check that the GREEN LEDS on both sides of the door blink while the door opens [Safety Request: Prasa8-05] | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10275 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10276 | R | Read Defined Variable [NI] Dev2/82 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10277 | I | Door Opening Gap | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10278 | A | Measure the opening gap of the door. (The measurement must be done at the | | OK | | Anthonia Mabowa - 494131 | TC1 |

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| | | BOTTOM of the door). | | | | | |
| 10279 | R | Door 1 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1390 | Anthonia Mabowa - 494131 | TC1 | |
| 10280 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10281 | R | Door 1 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1405 | Anthonia Mabowa - 494131 | TC1 | |
| 10282 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10283 | R | Door 1 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1400 | Anthonia Mabowa - 494131 | TC1 | |
| 10284 | I | Door 3 | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10285 | I | Door Opening Gap | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10286 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10287 | R | Door 3 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1398 | Anthonia Mabowa - 494131 | TC1 | |
| 10288 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10289 | R | Door 3 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1406 | Anthonia Mabowa - 494131 | TC1 | |
| 10290 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10291 | R | Door 3 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1402 | Anthonia Mabowa - 494131 | TC1 | |
| 10292 | I | Door 5 | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10293 | I | Door Opening Gap | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10294 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10295 | R | Door 5 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1397 | Anthonia Mabowa - 494131 | TC1 | |

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| 10296 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10297 | R | Door 5 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | | OK | 1407 | Anthonia Mabowa - 494131 | TC1 |
| 10298 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10299 | R | Door 5 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | | OK | 1401 | Anthonia Mabowa - 494131 | TC1 |
| 10300 | A | Release [TT] (MPU1)lo_dor_tc1opendoorleft | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10301 | R | Check if ALL left doors closes in 3 sec (+1/-0) | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10302 | R | Check that the RED leds on both sides of the door blink while the door closes [Safety Request: Prasa8-05] | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10303 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10304 | R | Read Defined Variable [NI] Dev2/82 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10305 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10306 | A | Force [NI] Dev4/86 = 0.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10307 | A | Release [TT] (MPU1)lo_dor_tc1distertmsauthlefr1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10308 | A | Release [TT] (MPU1)lo_dor_tc1distertmsauthlefr2 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10309 | I | Door 2 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10310 | I | ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10311 | A | Force [NI] Dev4/87 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10312 | A | Force [TT] (MPU1)lo_dor_tc1distertmsauthright1 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10313 | A | Force [TT] (MPU1)lo_dor_tc1distertmsauthright2 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |

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|-------|---|---|--|----|------|-----------------------------|-----|
| 10314 | A | Force [TT] (MPU1)lo_dor_tc1opendoorright = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10315 | R | Check if ALL right doors open in 3 sec (+1/-0) | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10316 | R | Check that the GREEN LEDS on both sides of the door blink while the door opens. [Safety Request: Prasa8-05] | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10317 | R | Once completely opened, check that the LEDS are steady RED | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10318 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10319 | R | Read Defined Variable [NI] Dev2/82 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10320 | I | Door Opening Gap | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10321 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10322 | R | Door 2 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | | OK | 1396 | Anthonia Mabowa - 494131 | TC1 |
| 10323 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10324 | R | Door 2 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | | OK | 1405 | Anthonia Mabowa - 494131 | TC1 |
| 10325 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10326 | R | Door 2 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | | OK | 1400 | Anthonia Mabowa - 494131 | TC1 |
| 10327 | I | Door 4 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10328 | I | Door Opening Gap | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10329 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10330 | R | Door 4 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | | OK | 1394 | Anthonia Mabowa - 494131 | TC1 |
| 10331 | A | Measure the opening gap of the door. (The measurement must be done at the | | OK | | Anthonia Mabowa - 494131 | TC1 |

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|-------|---|--|----|------|-----------------------------|-----|--|
| | | TOP of the door). | | | | | |
| 10332 | R | Door 4 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1406 | Anthonia Mabowa - 494131 | TC1 | |
| 10333 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10334 | R | Door 4 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1403 | Anthonia Mabowa - 494131 | TC1 | |
| 10335 | I | Door 6 | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10336 | I | Door Opening Gap | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10337 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10338 | R | Door 6 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1398 | Anthonia Mabowa - 494131 | TC1 | |
| 10339 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10340 | R | Door 6 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1405 | Anthonia Mabowa - 494131 | TC1 | |
| 10341 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10342 | R | Door 6 gap Result Min/Max : 1390.00<= x<= 1410.00 (mm) | OK | 1403 | Anthonia Mabowa - 494131 | TC1 | |
| 10343 | I | Obstacle Detection | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10344 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10345 | A | Force [NI] Dev4/86 = 1.0 | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10346 | A | Force [TT] (MPU1)lo_dor_tc1distertmsauthlefr1 = 1.0 | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10347 | A | Force [TT] (MPU1)lo_dor_tc1distertmsauthlefr2 = 1.0 | OK | | Anthonia Mabowa - 494131 | TC1 | |
| 10348 | A | Force [TT] (MPU1)lo_dor_tc1opendoorleft = 1.0 | OK | | Anthonia Mabowa - 494131 | TC1 | |

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|-------|---|--|--|----|---|--------------------------|-----|
| 10349 | A | Position an obstacle on the floor in the centre of each and every door closing line | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10350 | A | Release [TT] (MPU1)lo_dor_tc1opendoorright | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10351 | A | Release [TT] (MPU1)lo_dor_tc1opendoorleft | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10352 | R | All doors will hit the obstacles, reopen and try to close again 3 times. On the third attempt ALL doors will stop and stand ajar - free to be opened manually | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10353 | A | Force [TT] (MPU1)lo_dor_tc1opendoorright = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10354 | A | Force [TT] (MPU1)lo_dor_tc1opendoorleft = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10355 | A | Remove ALL the obstacles | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10356 | A | Release [TT] (MPU1)lo_dor_tc1opendoorright | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10357 | A | Release [TT] (MPU1)lo_dor_tc1opendoorleft | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10358 | R | Check if ALL doors close in 3 sec (+1/-0) | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10359 | R | Check that the RED LEDS on both sides of the door blink while the door closes [Safety Request: Prasa8-05] | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10360 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10361 | R | Read Defined Variable [NI] Dev2/82 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10362 | I | ERTMS Auth Train Line Dev4/87 = END2 90XP15 pin 47 (Right) Dev4/86 = END2 90XP15 pin 44 (Left) | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10363 | A | Force [NI] Dev4/86 = 0.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10364 | A | Force [NI] Dev4/87 = 0.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10365 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP15 pin 96 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10366 | A | Force [NI] Dev4/89 = 0.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |

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|-------|---|--|--|----|--|-----------------------------|-----|
| 10367 | A | Release [TT] (MPU1)lo_dor_tc1distertmsauthrightr1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10368 | A | Release [TT] (MPU1)lo_dor_tc1distertmsauthrightr2 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10369 | A | Release [TT] (MPU1)lo_dor_tc1distertmsauthlefr1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10370 | A | Release [TT] (MPU1)lo_dor_tc1distertmsauthlefr2 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10371 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10372 | A | Force [NI] Dev4/39 = 0.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10373 | A | Switch Door Authorization Selector 50S7 to DRIVER | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10374 | I | END OF TEST | | OK | | Anthonia Mabowa - 494131 | TC1 |



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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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Serial Tests Report
TS255 – TC1 – VFT
RTR Vehicle Functional Static Testing Report

Document Reference
GIB0000007379
Version: A0

Emission date
11/11/2024

Section 15 – HVAC Air Conditioning

15.1 Instructions list

15.1.1 057_HVA-HVAC_TK

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|--|---|---------------|--------------|----------|---------|
| 10001 | I | HVA_057 Air Conditioning | | NE | | | TC1 |
| 10002 | I | Initial conditions | | NE | | | TC1 |
| 10003 | A | Car Should be Prepared | | NE | | | TC1 |
| 10004 | I | Power Supply | | NE | | | TC1 |
| 10005 | A | Close Circuit Breaker 57Q1 | | NE | | | TC1 |
| 10006 | A | Close Circuit Breaker 57Q2 | | NE | | | TC1 |
| 10007 | I | HVAC Electronic Power Supply | | NE | | | TC1 |
| 10008 | R | The HVAC electronic is ON | | NE | | | TC1 |
| 10009 | I | Software Upload | | NE | | | TC1 |
| 10010 | A | Close Circuit Breaker F1 on the HVAC Panel | | NE | | | TC1 |
| 10011 | A | Turn the control switch to AUTO position on the HVAC Panel | | NE | | | TC1 |
| 10012 | I | Follow the procedure in the document below to upload software onto the HVAC electronic | | NE | | | TC1 |
| 10013 | A | |  | NE | | | TC1 |
| 10014 | I | Checking 400Vac | | NE | | | TC1 |
| 10015 | A | Ensure that the 400Vac Shore Supply is connected to the vehicle, else connect it | | NE | | | TC1 |
| 10016 | A | Disconnect connector 57XP4_X5 and use a multimeter to measure 400Vac between phases a1, a2 and b1 | | NE | | | TC1 |
| 10017 | R | 400Vac is measured between each of the phases | | NE | | | TC1 |
| 10018 | A | On the same connector, with a phasemeter, check the correct Phase Rotation between L1- Phase a1, L2- | | NE | | | TC1 |

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|-------|---|---|---|----|--|-----|
| | | Phase a2, L3- Phase b1 | | | | |
| 10019 | R | The phase rotation is correct between all three phases | | NE | | TC1 |
| 10020 | A | Normalize connector 57XP4_X5 | | NE | | TC1 |
| 10021 | I | HVAC 50% restriction | | NE | | TC1 |
| 10022 | A | Force [TT] NRG_HvacTc150Cmd = 0 | | NE | | TC1 |
| 10023 | A | Force [TT] NRG_HvacTc1Cab50Cmd = 0 | | NE | | TC1 |
| 10024 | I | HVAC inhib | | NE | | TC1 |
| 10025 | A | Force [TT] (MPU1)lo_hva_tc1hvacinhibr1__1 = 1 | | NE | | TC1 |
| 10026 | A | Force [TT] (MPU1)lo_hva_tc1hvacinhibr2__1 = 1 | | NE | | TC1 |
| 10027 | R | HVAC unit turns ON and starts to work | | NE | | TC1 |
| 10028 | I | Emergency Ventilation | | NE | | TC1 |
| 10029 | A | Force [TT] (MPU1)lo_hva_tc1emergventil__1 = 1 | | NE | | TC1 |
| 10030 | A | All saloon HVAC units are in ventilation mode, not heating/cooling | | NE | | TC1 |
| 10031 | A | Connect the laptop to the HVAC maintenance software using HCU Finder and verify that main mode changed to Emergency |  | NE | | TC1 |
| 10032 | A | Release [TT] (MPU1)lo_hva_tc1emergventil__1 | | NE | | TC1 |
| 10033 | I | Forced Mode (Saloon HVAC) | | NE | | TC1 |
| 10034 | I | In the maintenance software, select the 'Forced' tab, and use the "Required working mode" drop down box to force the following modes: | | NE | | TC1 |
| 10035 | A | For the next sections, walk through the whole car and physically check (feel) that the HVAC is functioning as desired | | NE | | TC1 |
| 10036 | A | Force Ventilation mode on the Saloon HVAC | | NE | | TC1 |

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|-------|---|--|---|----|--|-----|
| 10037 | I | Ventilation mode |  | NE | | TC1 |
| 10038 | R | All saloon HVAC units work in Ventilation mode. Not heating/cooling | | NE | | TC1 |
| 10039 | I | Cooling Mode | | NE | | TC1 |
| 10040 | A | Force Cooling mode on the Saloon HVAC | | NE | | TC1 |
| 10041 | R | All saloon HVAC units work in Cooling mode | | NE | | TC1 |
| 10042 | I | Heating Mode | | NE | | TC1 |
| 10043 | A | Force Heating mode on the Saloon HVAC | | NE | | TC1 |
| 10044 | R | All saloon HVAC units work in Heating mode | | NE | | TC1 |
| 10045 | I | Automatic Mode | | NE | | TC1 |
| 10046 | A | Force Self-Test on the Saloon HVAC | | NE | | TC1 |
| 10047 | R | All saloon HVAC units work according to the mode described in the "Actual working mode" | | NE | | TC1 |
| 10048 | R | The Exhaust fans are Turned OFF | | NE | | TC1 |
| 10049 | I | Cabin Footrest Heater Test | | NE | | TC1 |
| 10050 | I | Use the tools list to record the serial number of the Infrared Thermometer that will be used in the next section | | NE | | TC1 |
| 10051 | A | Close Circuit Breaker 57Q3 | | NE | | TC1 |
| 10052 | R | The Foot Heater pushbutton white lamp 57S3 is OFF | | NE | | TC1 |
| 10053 | R | Foot Heater is Off (UDM) | | NE | | TC1 |
| 10054 | A | Press the Foot Heater Pushbutton 57S3 | | NE | | TC1 |
| 10055 | R | The Foot Heater pushbutton white lamp 57S3 is ON | | NE | | TC1 |
| 10056 | R | Read Defined Variable [TT] (MPU1)li_hva_tc1footheaterfault___1 = 0 | | NE | | TC1 |
| 10057 | R | Foot Heater is ON (allow some time for it to heat up and confirm with Infrared | | NE | | TC1 |

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|-------|---|---|---|----|--|-----|
| | | Thermometer that it is heating up) | | | | |
| 10058 | A | Once verified working, press the Foot Heater Pushbutton 57S3 | | NE | | TC1 |
| 10059 | R | The Foot Heater pushbutton white lamp 57S3 is OFF | | NE | | TC1 |
| 10060 | R | Read Defined Variable [TT] (MPU1)li_hva_tc1footheaterfault___1 = 0 | | NE | | TC1 |
| 10061 | R | Foot Heater is OFF (allow some time for it to cool down and confirm with Infrared Thermometer that it is cooling down) | | NE | | TC1 |
| 10062 | A | Check that the Footrest can go up by slightly pressing the adjusting pedal. | | NE | | TC1 |
| 10063 | R | The Footrest is adjustable, it can go up. | | NE | | TC1 |
| 10064 | A | Check that the Footrest can go down by pressing the adjusting pedal. Ensure the other foot applies force on the Footrest | | NE | | TC1 |
| 10065 | R | The Footrest is adjustable, it can go down. | | NE | | TC1 |
| 10066 | I | Forced Mode (Cabin HVAC) |  | NE | | TC1 |
| 10067 | I | In the maintenance software, select the 'Forced' tab, and use the "Required working mode" drop down box to force the following modes: | | NE | | TC1 |
| 10068 | I | Ventilation Mode | | NE | | TC1 |
| 10069 | A | Force Ventilation mode on the Cab HVAC | | NE | | TC1 |
| 10070 | R | The Cab HVAC works in Ventilation mode. Not heating/cooling | | NE | | TC1 |
| 10071 | I | Cooling Mode | | NE | | TC1 |
| 10072 | A | Force Cooling mode on the Cab HVAC | | NE | | TC1 |
| 10073 | R | The Cab HVAC works in Cooling mode | | NE | | TC1 |
| 10074 | I | Heating Mode | | NE | | TC1 |
| 10075 | A | Force Heating mode on the Cab HVAC | | NE | | TC1 |
| 10076 | R | The Cab HVAC works in Heating mode | | NE | | TC1 |

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|-------|---|---|---|----|--|-----|
| 10077 | I | Automatic Mode | | NE | | TC1 |
| 10078 | A | Force Automatic mode on the Cab HVAC | | NE | | TC1 |
| 10079 | R | The Cab HVAC works in Automatic mode - according to the mode described in the "Actual working mode" | | NE | | TC1 |
| 10080 | I | HVAC Faults | | NE | | TC1 |
| 10081 | A | In the maintenance software, select the "Alarms / Warnings" tab | | NE | | TC1 |
| 10082 | A | Ensure there are no active faults on the HVAC |  | NE | | TC1 |
| 10083 | R | No active faults identified on the HVAC unit | | NE | | TC1 |
| 10084 | I | Air Flow Measure | | NE | | TC1 |
| 10085 | A | Check that the windshield air outlet is open | | NE | | TC1 |
| 10086 | A | On the left side diffuser, put the anemometer in the middle of the air diffuser directly in contact with the grill | | NE | | TC1 |
| 10087 | A | Record average speed over 30 s | | NE | | TC1 |
| 10088 | R | Average air speed Read Undefined Value : x () | | NE | | TC1 |
| 10089 | A | On the right diffuser, put the anemometer in the middle of the air diffuser directly in contact with the grill | | NE | | TC1 |
| 10090 | A | Record average speed over 30 s | | NE | | TC1 |
| 10091 | R | Average air speed Read Undefined Value : x () | | NE | | TC1 |
| 10092 | A | Compare the two recorded air speeds, left and right. The values should be within 15% of each other. If the difference is greater than 15%, check if the flexible duct going to the windshield diffuser is not loose or squeezed. | | NE | | TC1 |
| 10093 | R | The difference between left and right air flow is less than 15% | | NE | | TC1 |
| 10094 | A | Release [TT] (MPU1)lo_hva_tc1hvacinhibr1__1 | | NE | | TC1 |



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|-------|---|--|--|----|--|--|-----|
| 10095 | A | Release [TT] (MPU1)lo_hva_tc1hvacinhibr2__1 | | NE | | | TC1 |
| 10096 | A | Release [TT] NRG_HvacTc150Cmd | | NE | | | TC1 |
| 10097 | A | Release [TT] NRG_HvacTc1Cab50Cmd | | NE | | | TC1 |
| 10098 | I | End of Test | | NE | | | TC1 |

15.1.2 057_HVA_SME-HVAC_SME

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|-------------------------------|---------|
| 10001 | I | HVA_057 Air Conditioning | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10002 | I | Initial conditions | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10003 | A | Car Should be Prepared with CVS running and 400V ac available in the car | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10004 | I | HVAC Electronic Power Supply | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10005 | A | Close Circuit Breaker 13Q1 and 13Q5 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10006 | I | Checking 400Vac | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10007 | A | Close Circuit Breaker 57Q1 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10008 | A | Disconnect connector 57XP4_X5 and Measure 400Vac between all 3 phases which are a1, a2 and b1 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10009 | R | 400Vac measured between all phases | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10010 | A | On same connector 54XP4_X5, with a phasemeter, check the correct Phase Rotation between points a1- Phase L1, a2- Phase L2 and b1- Phase L3. | | OK | | Dilikani Ngubane - 526515 | TC1 |
| 10011 | R | The phase rotation is correct between all three phases | | OK | | Dilikani Ngubane - 526515 | TC1 |
| 10012 | A | Normalize connector 57XP4_X5 | | OK | | Dilikani Ngubane - 526515 | TC1 |
| 10013 | I | HVAC controller power supply | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10014 | A | Close Circuit Breaker 57Q2 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10015 | A | Allow the HVAC to initialize and check on the DDU if the HVAC is online | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10016 | R | HVAC unit turns ON and starts to work | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10017 | I | HVAC inhib | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10018 | A | Force [TT] (MPU1)lo_hva_tc1hvacinhibr1__1 = 1.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |

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|-------|---|--|---|----|--|----------------------------------|-----|
| 10019 | A | Force [TT] (MPU1)lo_hva_tc1hvacinhibr2__1 = 1.0 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10020 | I | HVAC 50% restriction | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10021 | A | Force [TT] NRG_HvacTc150Cmd = 0 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10022 | A | Force [TT] NRG_HvacTc1Cab50Cmd = 0 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10023 | I | Saloon HVAC | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10024 | I | HVAC web portal | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10025 | A | The attached document is a procedure on how to navigate around the maintenance software. |  | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10026 | I | Connect the laptop to the HVAC maintenance software using web browser. Enter the following IP address on the web browser 10.136.xxx.27 xxx represents the train number Login: maint Password: maint |  | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10027 | R | On status tab, Active mode is off for both cab and saloon |  | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10028 | A | Go to Alarms tab and clear all the alarms for saloon and cabin | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10029 | I | Full "Self test" saloon | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10030 | I | For the following tests make sure on the webHMI tab you change controller to be controlled by webHMI and not MPU |  | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10031 | A | Before running the full test, please click on reset test to reset the previous results. | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10032 | A | Select Full-Test on the Saloon HVAC |  | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10033 | R | All saloon HVAC units work according to the mode described in the "ACTIVE MODE" on the status tab | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10034 | R | When the test is complete, please check if the status is showing as "TEST PASS" and the test took 3 mins +/- 2 seconds for each mode. | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10035 | I | Forced Mode (Saloon HVAC) | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10036 | I | During all tests Walk through the whole car and physically check (feel) that the | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |

| | | | | | | | |
|-------|---|---|---|----|---|-------------------------------|-----|
| | | HVAC is functioning as desired | | | | | |
| 10037 | I | Go to maintenance tab to force the following modes |  | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10038 | I | Cooling Mode | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10039 | A | Select forced Cooling mode on the Saloon HVAC and let it run for 5 mins | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10040 | R | All HVAC units are cooling | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10041 | I | Heating Mode | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10042 | A | Select forced Heating mode on the Saloon HVAC and let it run for 5 mins | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10043 | R | All HVAC units are heating | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10044 | I | Cabin Footrest Heater Test | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10045 | I | Use the tools list to record the serial number of the Infrared Thermometer that will be used in the next section | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10046 | A | Close Circuit Breaker 57Q3 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10047 | R | The Foot Heater pushbutton white lamp 57S3 is OFF | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10048 | R | Foot Heater is Off (UDM) | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10049 | A | Press the Foot Heater Pushbutton 57S3 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10050 | R | The Foot Heater pushbutton white lamp 57S3 is ON | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10051 | R | Read Defined Variable [TT] (MPU1)li_hva_tc1footheaterfault___1 = 0.0 | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10052 | R | Foot Heater is ON (allow some time for it to heat up and confirm with Infrared Thermometer that it is heating up) | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10053 | A | Once verified working, press the Foot Heater Pushbutton 57S3 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10054 | R | The Foot Heater pushbutton white lamp 57S3 is OFF | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10055 | R | Read Defined Variable [TT] | | OK | 0 | Paseka Ditlhakanyane - 491468 | TC1 |

| | | | | | | |
|-------|---|---|---|----|-------------------------------|-----|
| | | (MPU1)li_hva_tc1footheaterfault___1 = 0.0 | | | | |
| 10056 | R | Foot Heater is OFF (allow some time for it to cool down and confirm with Infrared Thermometer that it is cooling down) | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10057 | A | Check that the Footrest can go up by slightly pressing the adjusting pedal. | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10058 | R | The Footrest is adjustable, it can go up. | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10059 | A | Check that the Footrest can go down by pressing the adjusting pedal. Ensure the other foot applies force on the Footrest | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10060 | R | The Footrest is adjustable, it can go down. | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10061 | I | Cab Hvac | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10062 | I | Full "Self test" Cab | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10063 | A | Before running the full test, please click on reset test to reset the previous results. |  | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10064 | A | Select Full test on the Cab HVAC | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10065 | R | The cab HVAC works according to the mode described in the "ACTIVE MODE" on the status tab | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10066 | R | When the test is complete, please check if the status is showing as "TEST PASS" and the test took 3 mins +/- 2 seconds for each mode. | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10067 | I | Forced Mode (Cabin HVAC) | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10068 | I | For the coming test, check(feel) that the air coming through the supply air duct in the cabin is as desired "VENT/COOL or HEAT" | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10069 | I | Go to maintenance tab to force the following modes |  | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10070 | I | Cooling Mode | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10071 | A | Select forced Cooling mode on the Cabin HVAC and let it run for 5 mins | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10072 | R | All HVAC ducts in the cab are cooling | | OK | Paseka Ditlhakanyane - 491468 | TC1 |
| 10073 | I | Heating Mode | | OK | Paseka Ditlhakanyane - 491468 | TC1 |

| | | | | | | | |
|-------|---|--|---|----|-----|-------------------------------|-----|
| 10074 | R | Select forced heating mode on the Cabin HVAC and let it run for 5 mins | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10075 | R | All HVAC ducts in the cab are heating | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10076 | I | HVAC Faults | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10077 | A | In the maintenance software, select the "Alarms" tab | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10078 | A | Ensure there are no active faults on the HVAC for Cabin and Saloon. Use the highlighted drop down to navigate between saloon and cabin. |  | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10079 | R | No active faults identified on the HVAC unit | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10080 | I | Air Flow Measure | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10081 | A | Turn the cab ventilation control switch 57S1 to high speed position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10082 | A | Check that the windshield air outlet is open | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10083 | A | On the left side diffuser, put an anemometer in the middle of the air diffuser directly in contact with the grill | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10084 | A | Record the average air speed over 30 s | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10085 | R | Average air speed Read Undefined Value : x (m/s) | | OK | 3.1 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10086 | A | On the right side diffuser, put the anemometer in the middle of air diffuser directly in contact with the grill | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10087 | A | Record the average air speed over 30s | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10088 | R | Average air speed Read Undefined Value : x (m/s) | | OK | 2.7 | Paseka Ditlhakanyane - 491468 | TC1 |
| 10089 | A | Compare the two recorded air speeds, left and right. the values should be within 15% of each other. If the difference is greater than 15%, check that the flexible duct going to windshield diffuser is not squeezed. | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10090 | R | Difference between left-right air flow is within 15% | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |

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|-------|---|--|--|----|--|-------------------------------|-----|
| 10091 | A | Turn the Cab Ventilation Control Switch 57S1 to OFF position | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10092 | R | Cabin HVAC turned OFF | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10093 | I | Variable release | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10094 | A | Release [TT] (MPU1)lo_hva_tc1hvacinhibr1__1 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10095 | A | Release [TT] (MPU1)lo_hva_tc1hvacinhibr2__1 | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10096 | A | Release [TT] NRG_HvacTc150Cmd | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10097 | A | Release [TT] NRG_HvacTc1Cab50Cmd | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |
| 10098 | I | End of test | | OK | | Paseka Ditlhakanyane - 491468 | TC1 |



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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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Section 16 – Fire Protection

16.1 Instructions list

16.1.1 067_FSD-Fire Protection

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|----------------------------|---------|
| 10001 | I | Fire Protection System (SPP=067) | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10002 | I | Initial conditions | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10003 | I | Car Should be Prepared | | OK | | Mpumelelo Sithole - 529980 | TC1 |
| 10004 | I | Power Supply | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10005 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10006 | A | Close Circuit Breaker 67Q1 | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10007 | R | Check that the Control Fire Detection Unit 67A1 is ON | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10008 | I | Fire Detection Control and Reset | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10009 | I | Fire Detection Train Lines Dev4/76 = END2 90XP14 pin 21 Dev2/7 = END1 Coupler pin 008 Dev2/33 = END1 Coupler pin 108 | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10010 | A | Force [NI] Dev4/76 = 1.0 | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10011 | R | Read Defined Variable [NI] Dev2/7 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10012 | R | Read Defined Variable [NI] Dev2/33 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC1 |
| 10013 | A | Check on the Alarm Module that the fire alarm 67H1 is illuminated | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10014 | I | Fire Detection Train Lines Dev4/76 = END2 90XP14 pin 21 Dev2/7 = END1 Coupler pin 008 Dev2/33 = END1 Coupler pin 108 | | OK | | Siphesihle Mchunu - 491465 | TC1 |

| | | | | | | | |
|-------|---|--|--|----|---|----------------------------|-----|
| 10015 | A | Force [NI] Dev4/76 = 0.0 | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10016 | R | Read Defined Variable [NI] Dev2/7 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC1 |
| 10017 | R | Read Defined Variable [NI] Dev2/33 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC1 |
| 10018 | R | The Fire Alarm Reset Pushbutton lamp 67H1 is OFF | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10019 | I | Control Fire Detection Unit Configuration | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10020 | A | Open Circuit Breaker 67Q1 | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10021 | A | Place a bridge piece between: From: [67A1(local: +LV2 connector - 67XP1_C2 (pin 3))] to: [-67A1 (local: +LV2 connector -67XP1_C2 pin 1)] | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10022 | A | Place a bridge piece between: From: [67A1(local: +LV2 connector - 67XP1_C2 (pin 6))] to: [-67A1 (local: +LV2 connector -67XP1_C2 pin 4)] | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10023 | A | Check the continuity between the two provided points of the line below | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10024 | A | From: [(local: +END2 connector - 90XP13.b (pin 4))] to: [(local: +END2 connector -90XP13.a (pin 7))] | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10025 | A | From: [(local: +END2 connector - 90XP13.b (pin 5))] to: [(local: +END2 connector -90XP13.a (pin 8))] | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10026 | A | Remove a bridge piece between: From: [67A1(local: +LV2 connector - 67XP1_C2 (pin 3+))] to: [-67A1 (local: +LV2 connector -67XP1_C2 pin 1)] | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10027 | A | Remove a bridge piece between: From: [67A1(local: +LV2 connector - 67XP1_C2(pin 6))] to: [-67A1 (local: +LV2 connector -67XP1_C2 pin 4)] | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10028 | I | END OF TEST | | OK | | Siphesihle Mchunu - 491465 | TC1 |

Section 17 – Driving Command

17.1 Instructions list

17.1.1 030_DRC-Driving Command

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|--|------|---------------|--------------|--------------------------|---------|
| 10001 | I | Driving Command (SPP=30/31) | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10002 | I | Initial conditions | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10003 | I | Cabin should be active | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10004 | A | Ensure all the doors are closed | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10005 | A | Ensure that there is air connected to the main pipe | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10006 | A | Force [TT] (BCU2)li_mp_ps_ok = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10007 | I | Circuit Breakers | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10008 | A | Close Circuit Breaker "30Q1" | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10009 | A | Close Circuit Breaker "30Q2" | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10010 | A | Close Circuit Breaker "30Q3" | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10011 | A | Close Circuit Breaker "31Q1" | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10012 | I | Direction Selector Switch | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10013 | I | Set the Running Direction Switch 30A1.S2 to "Neutral" position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10014 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10015 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10016 | I | Set the Running Direction Switch 30A1.S2 to "Reverse" position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10017 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10018 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10019 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dsreverser1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |

| | | | | | | |
|-------|---|---|----|---|-----------------------------|-----|
| 10020 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dsreverser2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10021 | I | Reverse Train lines Dev2/28 = coupler pin 011 Dev2/29 = coupler pin 132 Dev5/78 = END2 90XP15 pin 30 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10022 | R | Read Defined Variable [NI] Dev2/28 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10023 | R | Read Defined Variable [NI] Dev2/29 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10024 | R | Read Defined Variable [NI] Dev5/78 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10025 | I | Set the Running Direction Switch 30A1.S2 to "Forward" position | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10026 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10027 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dsreverser1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10028 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dsreverser2 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10029 | I | Reverse Train lines Dev2/28 = coupler pin 011 Dev2/29 = coupler pin 132 Dev5/78 = END2 90XP15 pin 30 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10030 | R | Read Defined Variable [NI] Dev2/28 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10031 | R | Read Defined Variable [NI] Dev2/29 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10032 | R | Read Defined Variable [NI] Dev5/78 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10033 | I | Forward Train lines Dev2/26 = coupler pin 032 Dev2/27 = coupler pin 111 Dev5/35 = END2 90XP15 pin 25 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10034 | R | Read Defined Variable [NI] Dev2/26 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10035 | R | Read Defined Variable [NI] Dev2/27 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10036 | R | Read Defined Variable [NI] Dev5/35 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10037 | I | Set the Running Direction Switch 30A1.S2 to "Neutral" position | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10038 | I | Forward Train lines Dev2/26 = coupler pin 032 Dev2/27 = coupler pin 111 | OK | | Anthonia Mabowa - 494131 | TC1 |

| Test ID | Mode | Description | Result | Count | Tester | TC |
|---------|------|--|--------|-------|--------------------------|-----|
| | | Dev5/35 = END2 90XP15 pin 25 | | | | |
| 10039 | R | Read Defined Variable [NI] Dev2/26 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10040 | R | Read Defined Variable [NI] Dev2/27 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10041 | R | Read Defined Variable [NI] Dev5/35 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10042 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dsnozeror1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10043 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dsreverser1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10044 | I | Driving Mode | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10045 | A | Turn the Driving Mode Switch 30S1 to "Speed" position | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10046 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10047 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10048 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10049 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10050 | A | Turn the Driving Mode Switch 30S1 to "Effort" position | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10051 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10052 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit3r1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10053 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10054 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10055 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10056 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10057 | A | Turn the Driving Mode Switch 30S1 to "Depot" position | OK | | Anthonia Mabowa - 494131 | TC1 |

| | | | | | | |
|-------|---|--|----|---|-----------------------------|-----|
| 10058 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10059 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10060 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10061 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit3r1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10062 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10063 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10064 | A | Turn the Driving Mode Switch 30S1 to "Couple/Wash" position | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit1r1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit2r1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit3r1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10068 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit3r2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10069 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10070 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1dmodebit4r2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10071 | I | Reduced Power | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10072 | A | Press and hold the Reduced Power Pushbutton 30S2 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10073 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1reducedpowerr1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10074 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1reducedpowerr2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10075 | A | Release the Reduced Power Pushbutton 30S2 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10076 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1reducedpowerr1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |

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| 10077 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1reducedpowerr2 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10078 | A | Force [TT] (MPU1)lo_drc_tc1reducedlampr1 = 1.0 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10079 | R | Check that the Reduced Power Pushbutton lamp is ON | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10080 | A | Release [TT] (MPU1)lo_drc_tc1reducedlampr1 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10081 | R | Check that the Reduced Power Pushbutton lamp is OFF | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10082 | A | Force [TT] (MPU1)lo_drc_tc1reducedlampr2 = 1.0 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10083 | R | Check that the Reduced Power Pushbutton lamp is ON | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10084 | A | Release [TT] (MPU1)lo_drc_tc1reducedlampr2 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10085 | R | Check that the Reduced Power Pushbutton lamp is OFF | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10086 | I | Master Controller Traction / No Brake | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10087 | I | The Master Controller should be in "OFF" position | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10088 | R | Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch1 : 5479<= x <= 6369 | OK | 5984 | Anthonia Mabowa - 494131 | TC1 |
| 10089 | R | Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch2 : 5479<= x <= 6369 | OK | 5968 | Anthonia Mabowa - 494131 | TC1 |
| 10090 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcnoastr1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10091 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcnoastr2 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10092 | I | No Brake Train lines Dev2/32 = coupler pin 039 Dev2/8 = coupler pin 139 Dev5/82 = 90XP15 pin 32 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10093 | R | Read Defined Variable [NI] Dev2/32 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10094 | R | Read Defined Variable [NI] Dev5/82 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |

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| 10095 | R | Read Defined Variable [NI] Dev2/8 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10096 | R | Read Defined Variable [TT] (MPU1)bcu1_bcutlnobr = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10097 | I | Ensure that the blue mushroom is released | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10098 | A | Turn Emergency Braking Loop Override Switch 44S2 to BYPASS | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10099 | I | Emergency Brake Train Line Dev 4/61 = 90XP15 pin 67 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10100 | A | Force [NI] Dev4/61 = 1.0 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10101 | R | Read Defined Variable [NI] Dev2/84 = 1.0 | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10102 | R | Read Defined Variable [NI] Dev2/85 = 1.0 | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10103 | A | Turn the Traction Interlock Override Switch 31S1 to "Override" position | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10104 | R | Check that the indicator lamp 31H1 is ON | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10105 | I | Emergency Brake Train Line Dev 4/61 = 90XP15 pin 67 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10106 | A | Force [NI] Dev4/61 = 0.0 | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10107 | R | Read Defined Variable [NI] Dev2/84 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10108 | R | Read Defined Variable [NI] Dev2/85 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10109 | A | Check that the indicator lamp 31H1 is OFF | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10110 | A | Turn Emergency Braking Loop Override Switch 44S2 to Normal | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10111 | A | Place the Master Controller in "100% Traction" position | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10112 | R | Read Min/Max [TT] (MPU1)ai_drc_tc1mcpoisionch1 : 29183<= x <= 31102 | OK | 30912 | Anthonia Mabowa - 494131 | TC1 |
| 10113 | R | Read Min/Max [TT] (MPU1)ai_drc_tc1mcpoisionch2 : 29183<= x <= 31102 | OK | 30928 | Anthonia Mabowa - 494131 | TC1 |
| 10114 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mctracotionr1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |

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| 10115 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mctractonr2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10116 | I | No Brake Train line Dev5/82 = 90XP15 pin 32 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10117 | R | Read Defined Variable [NI] Dev5/82 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10118 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcnoastr1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10119 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcnoastr2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10120 | I | Traction Train lines Dev2/30 = coupler pin 026 Dev2/31 = coupler pin 126 Dev5/81 = END2 90XP15 pin 31 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10121 | R | Read Defined Variable [NI] Dev5/81 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10122 | R | Read Defined Variable [NI] Dev2/30 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10123 | R | Read Defined Variable [NI] Dev2/31 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10124 | R | Read Defined Variable [TT] (MPU1)bcu1_bcutlnobr = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10125 | R | Read Defined Variable [TT] (MPU1)bcu1_bcutltract = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10126 | A | Place the Master Controller in "100% Service Brake" position | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10127 | R | Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch1 : 29183<= x <= 31102 | OK | 30896 | Anthonia Mabowa - 494131 | TC1 |
| 10128 | R | Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch2 : 29183<= x <= 31102 | OK | 30816 | Anthonia Mabowa - 494131 | TC1 |
| 10129 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10130 | I | No Brake Train lines Dev2/32 = coupler pin 039 Dev2/8 = coupler pin 139 Dev5/82 = 90XP15 pin 32 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10131 | R | Read Defined Variable [NI] Dev2/32 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10132 | R | Read Defined Variable [NI] Dev2/8 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10133 | R | Read Defined Variable [NI] Dev5/82 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |

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| 10134 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10135 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mctractio1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10136 | I | Traction Train lines Dev2/30 = coupler pin 026 Dev2/31 = coupler pin 126 Dev5/81 = END2 90XP15 pin 31 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10137 | R | Read Defined Variable [NI] Dev2/30 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10138 | R | Read Defined Variable [NI] Dev2/31 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10139 | R | Read Defined Variable [NI] Dev5/81 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10140 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mctractio2 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10141 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcnoastr1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10142 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcemergencybraker1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10143 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcemergencybraker2 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10144 | R | Read Defined Variable [TT] (MPU1)bcu1_bcutltract = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10145 | R | Read Defined Variable [TT] (MPU1)bcu1_bcutlnobr = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10146 | A | Place the Master Controller in "Emergency Brake" position | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10147 | R | Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch1 : 29183<= x <= 31102 | OK | 30912 | Anthonia Mabowa - 494131 | TC1 |
| 10148 | R | Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch2 : 29183<= x <= 31102 | OK | 30928 | Anthonia Mabowa - 494131 | TC1 |
| 10149 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10150 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |

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| 10151 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcnoastr1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10152 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcemergencybraker1 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10153 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcemergencybraker2 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10154 | A | Place the Master Controller in "OFF" position | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10155 | R | Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch1 : 5479<= x <= 6369 | OK | 5984 | Anthonia Mabowa - 494131 | TC1 |
| 10156 | R | Read Min/Max [TT] (MPU1)ai_drc_tc1mcpositionch2 : 5479<= x <= 6369 | OK | 5968 | Anthonia Mabowa - 494131 | TC1 |
| 10157 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcnoastr1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10158 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker2 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10159 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1mcbraker1 = 0.0 | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10160 | I | Traction Interlock | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10161 | I | Traction Interlock Override | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10162 | I | Traction Interlock Train lines Dev2/34 = coupler pin 006 Dev2/35 = coupler pin 106 Dev5/83 = END2 90XP15 pin 41 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10163 | R | Read Defined Variable [NI] Dev2/34 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10164 | R | Read Defined Variable [NI] Dev2/35 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10165 | R | Read Defined Variable [NI] Dev5/83 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10166 | I | Traction Interlock Bypass Train Line Dev5/4 = END2 90XP14 pin 6 | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10167 | R | Read Defined Variable [NI] Dev5/4 = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10168 | R | Read Defined Variable [TT] (BCU1)LI_NOT_INHIB = 1.0 | OK | 1 | Anthonia Mabowa - 494131 | TC1 |

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| 10169 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractintoverrider1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10170 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractintoverrider2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10171 | R | Check that the Indicator Lamp 31H2 is ON |  | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10172 | A | Turn the Traction Interlock Override Switch 31S1 to "Normal" position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10173 | I | Traction Interlock Train lines Dev2/34 = coupler pin 006 Dev2/35 = coupler pin 106 Dev5/83 = END2 90XP15 pin 41 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10174 | R | Read Defined Variable [NI] Dev2/34 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10175 | R | Read Defined Variable [NI] Dev2/35 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10176 | R | Read Defined Variable [NI] Dev5/83 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10177 | I | Traction Interlock Bypass Train Line Dev5/4 = END2 90XP14 pin 6 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10178 | R | Read Defined Variable [NI] Dev5/4 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10179 | R | Read Defined Variable [TT] (BCU1)LI_NOT_INHIB = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10180 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractintoverrider1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10181 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractintoverrider2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10182 | R | Check that the Indicator Lamp 31H2 is OFF |  | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10183 | I | Traction Interlock Relay | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10184 | A | Open Circuit Breaker "30Q1" | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10185 | A | Open Circuit Breaker "30Q2" | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10186 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP15 pin 96 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10187 | A | Force [NI] Dev4/89 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10188 | I | Set the Running Direction Switch 30A1.S2 to "Forward" position | | OK | | Anthonia Mabowa - 494131 | TC1 |

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| 10189 | A | Force [TT] (MPU1)lo_drc_tc1tractionloopr1 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10190 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 9 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10191 | A | Force [NI] Dev4/5 = 1.0 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10192 | A | Force [TT] (MPU1)lo_ubk_tc1emergbraker1 = 1.0 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10193 | A | Turn the Dead Man Override Switch 60S1 to "Override" position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10194 | A | Turn the ERTMS Isolation switch 62S1 to "Isolation" position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10195 | I | Traction Interlock Train lines Dev5/83 = END2 90XP15 pin 41 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10196 | R | Read Defined Variable [NI] Dev5/83 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10197 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc1emergrelay1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10198 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10199 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr2 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10200 | R | Check that the indicator lamp 31H1 is ON |  | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10201 | A | Press and activate the mushroom switch 44S1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10202 | R | Check that the indicator lamp 31H1 is OFF | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10203 | A | Release the mushroom switch 44S1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10204 | R | Check that the indicator lamp 31H1 is ON |  | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10205 | A | Place the Master Controller in "100% Traction" position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10206 | I | Traction Train lines Dev5/81 = END2 90XP15 pin 31 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10207 | R | Read Defined Variable [NI] Dev5/81 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC1 |
| 10208 | A | Place the Master Controller in "Neutral" position | | OK | | Anthonia Mabowa - 494131 | TC1 |

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| 10209 | A | Close Circuit Breaker "30Q1" | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10210 | A | Close Circuit Breaker "30Q2" | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10211 | I | Set the Running Direction Switch 30A1.S2 to "Neutral" position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10212 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10213 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr2 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10214 | I | Traction Interlock Train lines Dev5/83 = END2 90XP15 pin 41 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10215 | R | Read Defined Variable [NI] Dev5/83 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10216 | R | Check Indicator Lamp 31H1 is OFF |  | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10217 | A | Release [TT] (MPU1)lo_drc_tc1tractionloopr1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10218 | A | Force [TT] (MPU1)lo_drc_tc1tractionloopr2 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10219 | I | Set the Running Direction Switch 30A1.S2 to "Reverse" position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10220 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |
| 10221 | R | Check Indicator Lamp 31H1 is ON |  | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10222 | I | Traction Authorization at V>5km/h | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10223 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP15 pin 96 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10224 | A | Force [NI] Dev4/89 = 0.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10225 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10226 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10227 | A | Force [NI] Dev4/38 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10228 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 0.0 | | OK | 0 | Anthonia Mabowa - 494131 | TC1 |

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| 10229 | I | PEA Loop Train Line Dev4/62 = END2 90XP15 pin 95 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10230 | A | Force [NI] Dev4/62 = 1.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10231 | R | Read Defined Variable [TT] (MPU1)li_drc_tc1tractionauthorr1 = 1.0 | | OK | 1 | Anthonia Mabowa - 494131 | TC1 |
| 10232 | I | PEA Loop Train Line Dev4/62 = END2 90XP15 pin 95 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10233 | A | Force [NI] Dev4/62 = 0.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10234 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10235 | A | Force [NI] Dev4/38 = 0.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10236 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 8 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10237 | A | Force [NI] Dev4/5 = 0.0 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10238 | A | Release [TT] (MPU1)lo_ubk_tc1emergbraker1 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10239 | A | Release [TT] (MPU1)lo_drc_tc1tractionloopr2 | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10240 | I | Set the Running Direction Switch 30A1.S2 to "Normal" position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10241 | A | Turn the Dead Man Override Switch 60S1 to "Normal" position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10242 | A | Turn the ERTMS Isolation switch 62S1 to "Normal" position | | OK | | Anthonia Mabowa - 494131 | TC1 |
| 10243 | I | END OF TEST | | OK | | Anthonia Mabowa - 494131 | TC1 |



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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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Section 18 – Train-Ground Communication

18.1 Instructions list

18.1.1 062_ETC-ERTMS

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|---------------------------|---------|
| 10001 | I | ERTMS (SPP = 062) | | OK | | Philemon Milani - 484650 | TC1 |
| 10002 | I | Ensure Circuit Breaker 62Q1 is OPEN | | OK | | Philemon Milani - 484650 | TC1 |
| 10003 | I | DMI Power Supply | | OK | | Philemon Milani - 484650 | TC1 |
| 10004 | A | Use the following procedure to perform Electrical Check on the DMI power supply  | | OK | | Philemon Milani - 484650 | TC1 |
| 10005 | A | Close Circuit Breaker 62Q1 | | OK | | Philemon Milani - 484650 | TC1 |
| 10006 | R | The ERTMS Display Unit (MMI) is powered ON | | OK | | Philemon Milani - 484650 | TC1 |
| 10007 | A | Place the ERTMS Isolation Switch 62S1 in Isolation position | | OK | | Philemon Milani - 484650 | TC1 |
| 10008 | R | The ERTMS Display Unit (MMI) is powered OFF | | OK | | Philemon Milani - 484650 | TC1 |
| 10009 | I | DMI Software Upload | | OK | | Dilikani Ngubane - 526515 | TC1 |
| 10010 | A | Use the following procedure to upload the DMI software:  | | OK | | Dilikani Ngubane - 526515 | TC1 |
| 10011 | I | Emergency Brake By ERTMS | | OK | | Philemon Milani - 484650 | TC1 |
| 10012 | I | Emergency Brake ERTMS Train lines Dev4/88 =END2 Emergency Brake ERTMS 1 | | OK | | Philemon Milani - 484650 | TC1 |
| 10013 | A | Force [NI] Dev4/88 = 1.0 | | OK | | Philemon Milani - 484650 | TC1 |
| 10014 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r1 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10015 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r2 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10016 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r1 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10017 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r2 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |

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|-------|---|---|----|---|--------------------------|-----|
| 10018 | I | Emergency Brake ERTMS Train lines Dev4/80 =END2 Emergency Brake ERTMS 2 | OK | | Philemon Milani - 484650 | TC1 |
| 10019 | A | Force [NI] Dev4/80 = 1.0 | OK | | Philemon Milani - 484650 | TC1 |
| 10020 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r1 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10021 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r2 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10022 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r1 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10023 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r2 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10024 | I | Emergency Brake ERTMS Train lines Dev4/88 =END2 Emergency Brake ERTMS 1 | OK | | Philemon Milani - 484650 | TC1 |
| 10025 | A | Force [NI] Dev4/88 = 0.0 | OK | | Philemon Milani - 484650 | TC1 |
| 10026 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r1 = 1.0 | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10027 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r2 = 1.0 | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10028 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r1 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10029 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r2 = 0.0 | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10030 | I | Emergency Brake ERTMS Train lines Dev4/80 =END2 Emergency Brake ERTMS 2 | OK | | Philemon Milani - 484650 | TC1 |
| 10031 | A | Force [NI] Dev4/80 = 0.0 | OK | | Philemon Milani - 484650 | TC1 |
| 10032 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r1 = 1.0 | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10033 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk1r2 = 1.0 | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10034 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r1 = 1.0 | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10035 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsebk2r2 = 1.0 | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10036 | I | ERTMS Bypass/Reset | OK | | Philemon Milani - 484650 | TC1 |

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|-------|---|---|---|----|---|-----------------------------|-----|
| 10037 | I | ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/37 = END2 train line | | OK | | Philemon Milani - 484650 | TC1 |
| 10038 | R | Read Defined Variable [NI] Dev2/5 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10039 | R | Read Defined Variable [NI] Dev2/6 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10040 | R | Read Defined Variable [NI] Dev5/37 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10041 | A | Turn the cab key 30A1.S1 to non-active cab | | OK | | Philemon Milani - 484650 | TC1 |
| 10042 | I | ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/37 = END2 train line | | OK | | Philemon Milani - 484650 | TC1 |
| 10043 | R | Read Defined Variable [NI] Dev2/5 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10044 | R | Read Defined Variable [NI] Dev2/6 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10045 | R | Read Defined Variable [NI] Dev5/37 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10046 | A | Turn cab key 30A1.S1 to active cab position | | OK | | Philemon Milani - 484650 | TC1 |
| 10047 | I | Place the ERTMS switch 62S1 to Normal position | | OK | | Philemon Milani - 484650 | TC1 |
| 10048 | I | ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/37 = END2 train line | | OK | | Philemon Milani - 484650 | TC1 |
| 10049 | R | Read Defined Variable [NI] Dev2/5 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10050 | R | Read Defined Variable [NI] Dev5/37 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10051 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsbypassr1 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10052 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsbypassr2 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10053 | R | The indicator Lamp 62H1 is OFF |  | OK | | Philemon Milani - 484650 | TC1 |
| 10054 | A | Place the ERTMS isolation switch 62S1 in isolation position | | OK | | Philemon Milani - 484650 | TC1 |
| 10055 | I | ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 | | OK | | Philemon Milani - 484650 | TC1 |

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|-------|---|---|---|----|---|--------------------------|-----|
| | | Dev5/37 = END2 train line | | | | | |
| 10056 | R | Read Defined Variable [NI] Dev2/5 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10057 | R | Read Defined Variable [NI] Dev2/6 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10058 | R | Read Defined Variable [NI] Dev5/37 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10059 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsbypassr2 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10060 | R | Read Defined Variable [TT] (MPU1)li_ets_tc1ertmsbypassr1 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10061 | R | The indicator Lamp 62H1 is ON |  | OK | | Philemon Milani - 484650 | TC1 |
| 10062 | I | Place the ERTMS switch 62S1 to Normal position | | OK | | Philemon Milani - 484650 | TC1 |
| 10063 | A | Force [TT] (MPU1)lo_ets_tc1rstertmsr2 = 1.0 | | OK | | Philemon Milani - 484650 | TC1 |
| 10064 | A | Force [TT] (MPU1)lo_ets_tc1rstertmsr1 = 0.0 | | OK | | Philemon Milani - 484650 | TC1 |
| 10065 | I | ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/37 = END2 train line | | OK | | Philemon Milani - 484650 | TC1 |
| 10066 | R | Read Defined Variable [NI] Dev2/5 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10067 | R | Read Defined Variable [NI] Dev2/6 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10068 | R | Read Defined Variable [NI] Dev5/37 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10069 | A | Force [TT] (MPU1)lo_ets_tc1rstertmsr2 = 0.0 | | OK | | Philemon Milani - 484650 | TC1 |
| 10070 | A | Force [TT] (MPU1)lo_ets_tc1rstertmsr1 = 1.0 | | OK | | Philemon Milani - 484650 | TC1 |
| 10071 | I | ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/37 = END2 train line | | OK | | Philemon Milani - 484650 | TC1 |
| 10072 | R | Read Defined Variable [NI] Dev2/5 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10073 | R | Read Defined Variable [NI] Dev2/6 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |
| 10074 | R | Read Defined Variable [NI] Dev5/37 = 0.0 | | OK | 0 | Philemon Milani - 484650 | TC1 |

| | | | | | | | |
|-------|---|---|---|----|---|--------------------------|-----|
| 10075 | A | Force [TT] (MPU1)lo_ets_tc1rstertmsr2 = 1.0 | | OK | | Philemon Milani - 484650 | TC1 |
| 10076 | A | Force [TT] (MPU1)lo_ets_tc1rstertmsr1 = 1.0 | | OK | | Philemon Milani - 484650 | TC1 |
| 10077 | R | Read Defined Variable [NI] Dev2/5 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10078 | R | Read Defined Variable [NI] Dev2/6 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10079 | R | Read Defined Variable [NI] Dev5/37 = 1.0 | | OK | 1 | Philemon Milani - 484650 | TC1 |
| 10080 | R | The indicator Lamp 62H1 is ON |  | OK | | Philemon Milani - 484650 | TC1 |
| 10081 | A | Force [TT] (MPU1)lo_ets_tc1rstertmsr2 = 0.0 | | OK | | Philemon Milani - 484650 | TC1 |
| 10082 | A | Force [TT] (MPU1)lo_ets_tc1rstertmsr1 = 0.0 | | OK | | Philemon Milani - 484650 | TC1 |
| 10083 | I | Eurobalise Antenna Cable | | OK | | Philemon Milani - 484650 | TC1 |
| 10084 | I | Use the multimeter for continuity test | | OK | | Philemon Milani - 484650 | TC1 |
| 10085 | A | Refer to the picture below to test the Eurobalise antenna cables. |  | OK | | Philemon Milani - 484650 | TC1 |
| 10086 | R | ALL the points are continuous from the antenna to End 2. | | OK | | Philemon Milani - 484650 | TC1 |
| 10087 | I | END OF TEST | | OK | | Philemon Milani - 484650 | TC1 |

18.1.2 063_065_COM-Train-Ground Communication

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|---------------------------|---------|
| 10001 | I | Train-Ground Communication (SPP=063; 065) | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10002 | A | Turn Driver Key 30A1.S1 to Active Cab position | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10003 | I | UHF Radio | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10004 | I | Using the tool list on the side of your screen, note the serial number of the antenna cable tester used in this procedure | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10005 | I | Antenna Cable | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10006 | A | Using the Antenna cable tester, recall a set for the UHF Radio antenna cable | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10007 | A | Ensure the frequency range is 450MHz - 470MHz; Connect the UHF antenna cable to the measuring cable and note the resulting waveform | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10008 | R | The maximum peak of the waveform is = Result Max : $x \leq 1.5$ () | | OK | 1.32 | Siphehile Mchunu - 491465 | TC1 |
| 10009 | A | Save the waveform result with the following name: TS#(#-Train number)_TC1_ UHF | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10010 | A | Normalize UHF antenna cable | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10011 | I | Power Supply | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10012 | A | Close Circuit Breaker 63Q2 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10013 | R | Check that the UHF Radio is ON | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10014 | R | Check that the UHF hand-held is ON | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10015 | A | press the volume buttons '+' and '-' on the top of the radio, and endure that the sound level increases and decreases accordingly | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10016 | A | Open Circuit Breaker 63Q2 | | OK | | Siphehile Mchunu - 491465 | TC1 |

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|-------|---|--|--|----|--|---------------------------|-----|
| 10017 | R | Check that the UHF Radio is OFF | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10018 | A | Close Circuit Breaker 63Q1 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10019 | A | Turn the UHF Radio Emergency Supply switch 63S1 to the "Emergency" position, and release it | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10020 | R | Check that the UHF Radio is ON | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10021 | I | After 10 minutes, the UHF Radio should go OFF. Proceed to the next set of steps and validate the next line after 10 minutes. When the Radio goes off, Close 63Q2 to switch on the radio, then continue with the test | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10022 | R | After 10 minutes the UHF Radio turns OFF | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10023 | I | GSMR Radio | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10024 | I | Power Supply GSM_RADIO | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10025 | A | Close Circuit Breaker 65Q2 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10026 | R | Check that the GSM Radio is ON | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10027 | A | Open Circuit Breaker 65Q2 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10028 | R | Check that the GSM Radio is OFF | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10029 | A | Close Circuit Breaker 65Q1 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10030 | A | Turn the GSM Radio Emergency Supply switch 65S1 to the "Emergency" position, and release it | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10031 | R | Check that the GSM Radio is ON | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10032 | I | After 10 minutes, the GSM Radio should go OFF. Proceed to the next set of steps and validate the next line after 10 minutes. | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10033 | R | After 10 minutes the GSM Radio turns OFF | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10034 | I | Antenna Cable | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10035 | A | Using the Antenna cable tester, recall a set for the GSM Radio antenna cable | | OK | | Siphehile Mchunu - 491465 | TC1 |

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|-------|---|--|--|----|-----|---------------------------|-----|
| 10036 | A | Ensure the frequency range is 876MHz - 960MHz; Connect the GSMR antenna cable to the measuring cable and note the resulting waveform | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10037 | R | The maximum peak of the waveform is = Result Max : $x \leq 2$ () | | OK | 1.1 | Siphehile Mchunu - 491465 | TC1 |
| 10038 | A | Save the waveform result with the following name: TS#(#-Train number)_TC1_ GSMR | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10039 | A | Normalize GSMR antenna cable | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10040 | I | HMI Power On | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10041 | I | Proceed with the following steps after the Radio has turned OFF | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10042 | A | Close Circuit Breaker 65Q2 - allow time for the Radio to turn ON | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10043 | A | Turn Driver Key 30A1.S1 to Non-Active Cab position | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10044 | A | Reset (Off then On) Circuit Breaker 20Q2 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10045 | R | The GSMR HMI Screen turns OFF | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10046 | A | Turn the GSM Radio Emergency Supply switch 65S1 to the "Emergency" position, and release it | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10047 | R | The GSMR HMI Screen turns ON | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10048 | A | Open Circuit Breaker 65Q1 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10049 | A | Turn Driver Key 30A1.S1 to Active Cab position | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10050 | R | The GSMR turns ON | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10051 | A | Close Circuit Breaker 65Q1 | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10052 | I | Handset and loud-speaker volume | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10053 | A | Pick up the GSM-R handset. On the GSM-R, press the "11" key | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10054 | R | On the GSM-R MMI, volume symbol flashes above the "11" key. | | OK | | Siphehile Mchunu - 491465 | TC1 |
| 10055 | A | Adjust the volume using the arrow upward (louder) or arrow downward | | OK | | Siphehile Mchunu - 491465 | TC1 |

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|-------|---|--|--|----|--|----------------------------|-----|
| | | (quieter) | | | | | |
| 10056 | R | The sound change is audible (in the handset and visible on MMI) immediately | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10057 | A | On the GSM-R, press the "11" key. | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10058 | R | On the GSM-R MMI, volume symbol is no longer flashing above the "11" key. | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10059 | A | Hang up the GSM-R handset. On GSM-R M, Press the "11" key. | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10060 | R | On the GSM-R MMI, volume symbol flashes above the "11" key. | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10061 | A | Adjust the volume using the arrow upward (louder) or arrow downward (quieter) | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10062 | R | The sound change is audible (in the loudspeaker located in the ceiling and visible on MMI) immediately | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10063 | A | On the GSM-R, press the "11" key. | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10064 | R | On the GSM-R M, volume symbol is no longer flashing above the "11" key. | | OK | | Siphesihle Mchunu - 491465 | TC1 |
| 10065 | I | END OF TEST | | OK | | Siphesihle Mchunu - 491465 | TC1 |



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| Serial Tests Report TS255 – TC1 – VFT RTR Vehicle Functional Static Testing Report | Document Reference GIB0000007379 Version: A0 | Emission date 11/11/2024 |
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Section 19 – Vehicle Normalization

19.1 Instructions list

19.1.1 NORM-Vehicle Normalization

I - Information A - Action R - Result NE - Not Executed

| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|---|------|---------------|--------------|---------------------------|---------|
| 10001 | I | Initial Conditions | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10002 | I | The VFT procedures are all completed | | OK | | Dilikani Ngubane - 526515 | TC1 |
| 10003 | I | Vehicle Normalization Check | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10004 | R | On LV1 all Circuit Breakers are installed and secured | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10005 | R | On LV1 all Switches and Buttons are installed properly | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10006 | R | On LV1 all Relays and Timers are installed and secured | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10007 | R | On LV1 all Dataplugs are installed, tightened and earth braids are fastened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10008 | R | On LV1 BRIOMs are properly installed | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10009 | R | On LV1 all UMC Rack cards are installed properly | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10010 | R | On LV1 all Connectors are tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10011 | R | On LV1 there are no missing components, device, wiring or connectors. | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10012 | R | On LV2 the MCE is installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10013 | R | On LV2 the GSMR-Radio is installed and properly tightened, and its connectors are tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10014 | R | On LV2 the UHF-Radio is installed and properly tightened, and its connectors are tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10015 | R | On LV2 the FDCU is installed and properly tightened and its connectors are tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10016 | R | On LV2 all Circuit Breakers are installed and secured | | OK | | Gcobani Baliso - 480570 | TC1 |

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|-------|---|--|---|----|--|---------------------------|-----|
| 10017 | R | On LV2 all Connectors are tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10018 | R | On LV2 there are no missing components, device, wiring or connectors. | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10019 | A | On the Driver's Desk, all Switches and Buttons are installed properly. Refer to the image below. |  | OK | | Gcobani Baliso - 480570 | TC1 |
| 10020 | R | On the Driver's Desk, DDU is installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10021 | R | On the Driver's Desk, ERTMS HMI is installed and properly tightened | | OK | | Dilikani Ngubane - 526515 | TC1 |
| 10022 | R | On the Driver's Desk, GSMR HMI and Handset are installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10023 | R | On the Driver's Desk, Speedometer is installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10024 | R | On the Driver's Desk, Pressure Gauge is installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10025 | R | On the Driver's Desk, Alarm Module is installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10026 | R | On the Driver's Desk, Voltage/Traction Indicator is installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10027 | R | On the Driver's Desk, Master Controller is installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10028 | R | On the UDM, all connectors are tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10029 | R | On the UDR, Wiper Controller is properly installed | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10030 | R | On the UDL, BRIOMs are properly installed | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10031 | R | CPM is properly installed and secured | | OK | | Dilikani Ngubane - 526515 | TC1 |
| 10032 | R | Driver Foot Heater is properly installed | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10033 | R | On the Cab Ceiling, Lights are all properly installed | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10034 | R | On the Cab Ceiling, Speakers are all properly installed | | OK | | Gcobani Baliso - 480570 | TC1 |

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|-------|---|---|--|----|--|-------------------------|-----|
| 10035 | R | On the Cab Ceiling, Fire Detector is properly installed and secured | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10036 | R | On the Cab Ceiling, Frontal Camera is properly installed | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10037 | R | All DCUs are properly installed and secured | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10038 | R | All Internal Displays are properly installed and secured | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10039 | R | All Light Covers are properly installed | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10040 | R | All Saloon Cameras are properly installed | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10041 | R | All PEAs and PEIs are properly installed | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10042 | R | On LV7 all Dataplugs are installed, tightened and earth braids are fastened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10043 | R | On HC Cubicle the Controller is installed and properly tightened and its connectors are tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10044 | R | On the LVB, all Relays and Timers are installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10045 | R | On the LVB, all Circuit Breakers are installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10046 | R | On the Underframe, CVS Agate is installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10047 | R | On the Underframe, Speed Sensors are installed and properly tightened | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10048 | R | On the Underframe, Battery Box cables are properly connected | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10049 | R | ALL underframe covers are normalised | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10050 | R | On END1 the Octopus cables are disconnected from the coupler and properly stored. | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10051 | R | On END2 the Octopus cables are disconnected from the car and properly stored. | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10052 | R | The Test Bench is switched OFF and Octopus is disconnected and properly stored | | OK | | Gcobani Baliso - 480570 | TC1 |



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|-------|---|---------------------------------|--|----|--|----------------------------|-----|
| 10053 | R | ALL P.Os of this car are closed | | OK | | Gcobani Baliso - 480570 | TC1 |
| 10054 | I | End Of Test | | OK | | Gcobani Baliso - 480570 | TC1 |



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Section 20 – Report summaries

20.1 Results status

| Test Instruction Sheet | Compliant | Incomplete | Non-compliant |
|---|-----------|------------|---------------|
| Vehicle Normalization | X | | |
| Train-Ground Communication | X | | |
| TCMS Network | X | | |
| Service Brake | X | | |
| Rescue Mode and Emergency Disconnection | X | | |
| Passenger Doors | X | | |
| PACIS System | X | | |
| Internal Lighting | X | | |
| HVAC Air Conditioning | X | | |
| Holding and Parking Brake | X | | |
| Fire Protection | X | | |
| External Signalling | X | | |
| Energy Distribution | X | | |
| Emergency Brake | X | | |
| Driving Command | X | | |
| Driver Desk Illumination | X | | |
| Dead Man | X | | |
| Cabin Control | X | | |

20.2 Tools used

| Function | Tool name | Tool number | Next Calibration date |
|-------------|-------------|--------------|-----------------------|
| 040_SBK | Manometro | Manometer | 8/30/2025 |
| 045_PBK | Manometro | Manometer | 8/30/2025 |
| 057_HVA_SME | NPhasemètre | Phasemeter | 9/30/2025 |
| 057_HVA_SME | NAnémomètre | Anemometer 1 | 11/30/2024 |



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|-------------|------------|----------------|------------|
| 062_ETC | Multimetro | Meter 1 | 12/31/2024 |
| 063_065_COM | N | Radio Analyser | 11/30/2024 |

| Vehicle | Equipment | Expected version | Version loaded |
|---------|-----------|------------------|----------------|
| TC1 | | | |



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