

| PROJECT | CUSTOMER | VEHICLE |
|-----------------|----------|-----------------|
| Xtrapolis-PRASA | PRASA | 221 – TC2 – VFT |

RTR Vehicle Functional Static Testing TS221 TC2 Report
GIB0000006455






| | CREATED | VERIFIED | APPROVED | DISTRIBUTION |
|-----------|---------------------|----------------|-----------------|---|
| Name | Kealeboga MOCWAGOLE | 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 |

This report has been automatically generated from TES version 1

Table of modifications

| Rev | Date | Modifications Content | Writer |
|-----|------------|-----------------------|---------------------|
| A0 | 14/05/2024 | Creation | Kealeboga MOCWAGOLE |

Internal validations

| | Name | Function | Date | Signature |
|-----------------|---------------------|---------------------|------------|--|
| Creator | Kealeboga MOCWAGOLE | EPU Manager | 14/05/2024 |  X Kealeboga MOCWAGOLE EPU Manager |
| Verifier | Sifiso LUKHELE | Serial Test Manager | 14/05/2024 |  X Sifiso LUKHELE Serial Test Manager |
| Approver | Kgomotso NKOANA | Test Expert | 14/05/2024 |  X Kgomotso NKOANA Test Expert |

Execution Plan

| | |
|-------------------|------------|
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Section 1 – Purpose / Objectives



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Section 3 – Energy Distribution

3.3 Instructions list

3.3.1 015_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 | | Siphesihle Mchunu - 491465 | TC2 |
| 10002 | I | Initial conditions | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10003 | I | Car should be de-prepared with non-active cab | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10004 | I | Car should be without 400Vac shore supply | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10005 | I | All the Circuit Breakers should be OPEN | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10006 | I | Connector XBAT+ Positive and XBAT-2 Negative should not be connected to the battery | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10007 | I | Voltage Isolation | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10008 | 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 | | Siphesihle Mchunu - 491465 | TC2 |
| 10009 | R | Cables are correctly connected in the Power Bus XBAT+ Positive (BCOF) and XBAT-1/ XBAT-2 Negative (ISO_BCM) | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10010 | A | Check Resistance (Ohm) between point XBAT+ Positive of the power bus (BCOF) and car body | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10011 | R | Value (Ohm) Should be infinite. There is NO Continuity between point XBAT+ Positive of the power bus (BCOF) and car body | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10012 | A | Check Resistance (Ohm) between point XBAT-1 Negative of the Power Bus (ISO_BCM) and car body | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10013 | R | Value (Ohm) Should be about 0 Ohm. There is Continuity between point XBAT-1 Negative of the Power Bus (ISO_BCM) | | OK | | Siphesihle Mchunu - 491465 | TC2 |

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|-------|---|--|--|----|--|----------------------------|-----|
| | | and car body | | | | | |
| 10014 | A | Check Resistance (Ohm) between point XBAT-2 Negative of the Power Bus (ISO_BCM) and car body | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10015 | R | Value (Ohm) Should be about 0 Ohm. There is Continuity between point XBAT-1 Negative of the Power Bus (ISO_BCM) and car body | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10016 | I | Close left side cover of the Static Converter (CVS) | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10017 | A | Put Connector XBAT+ Positive and XBAT-2 Negative in the Battery | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10018 | R | Confirm the presence of battery voltage (above 80V dc) between Circuit Breaker 15Q2 point 1 and car body. (Permanent Line) | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10019 | A | Close Circuit Breaker 15Q2 (Permanent Line) | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10020 | A | Close Circuit Breaker 15Q4 (Permanent Line) | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10021 | A | Close Circuit Breaker 15Q1 (Normal Line) | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10022 | A | Close Circuit Breaker 15Q3 (Normal Line) | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10023 | I | 230Vac and 400Vac Isolation | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10024 | A | Close Circuit Breaker 13Q1 (230Vac) | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10025 | A | Close Circuit Breaker 13Q3 (230Vac) | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10026 | A | Close Circuit Breaker 13Q4 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10027 | I | Permanent and Normal Line | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10028 | A | Close Circuit Breaker 20Q1 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10029 | A | Close Circuit Breaker 18Q1 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10030 | A | Close Circuit Breaker 20Q2 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10031 | A | Close Circuit Breaker 18Q2 | | OK | | Siphesihle Mchunu - 491465 | TC2 |

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|-------|---|--|--|----|---|----------------------------|-----|
| 10032 | A | Close Circuit Breaker 25Q6 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10033 | A | Close Circuit Breaker 27Q1 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10034 | A | Prior to Switching the car ON and Plugging the shore supply onto the CVS. Open the CVS Agate cover | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10035 | R | The AGATE is OFF | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10036 | I | MCE Software Upload | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10037 | A | Turn the Backup Mode Switch 27S1 to "Back Up" position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10038 | A | Insert a USB programmed with the latest MCE Software into the MCE | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10039 | A | Close Circuit Breaker 40Q1 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10040 | A | Turn Battery Contactor Switch 18S1 to ON Position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10041 | A | Wait for about 12 minutes while the MCE is taking the software | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10042 | A | Open Circuit Breaker 40Q1, remove the USB and Close Circuit Breaker 40Q1 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10043 | I | Low voltage watchdog and battery connection | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10044 | A | Turn Battery Contactor Switch 18S1 to Off Position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10045 | A | Turn Driver's Master Key 30A1.S1 to Non Active Cabin | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10046 | A | Turn the Backup Mode Switch 27S1 to "Normal" position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10047 | I | Cab Selected On Train Train Line Dev4/1 = END2 90XP14 pin 3 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10048 | A | Force [NI] Dev4/1 = 1.0 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10049 | I | 110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10050 | R | Read Defined Variable [NI] Dev5/40 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC2 |

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|-------|---|---|--|----|---|-------------------------------|-----|
| 10051 | I | Cab Selected On Train Train Line Dev4/1 = END2 90XP14 pin 3 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10052 | A | Force [NI] Dev4/1 = 0.0 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10053 | A | Reset circuit breaker 15Q4 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10054 | R | Check that relay 15K2 is not active | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10055 | I | 110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10056 | R | Read Defined Variable [NI] Dev5/40 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC2 |
| 10057 | A | Turn key 30A1.S1 to Active Cabin Position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10058 | R | Relay 15K2 is active | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10059 | I | 110Vdc Permanent Train Line Dev5/40 = END2 90XP14 pin 29 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10060 | R | Read Defined Variable [NI] Dev5/40 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC2 |
| 10061 | A | Turn Battery Contactor Switch 18S1 to ON Position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10062 | A | Wait only for TCMS to initialize | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10063 | A | Whilst PACIS is still initializing, turn and hold 18S1 to OFF position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10064 | R | Read Defined Variable [TT] (MPU1)li_nrg_tc2battoffreqr1__1 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_nrg_tc2battoffreqr2__1 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC2 |
| 10066 | A | Put Battery Contactor Switch 18S1 to normal position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10067 | I | Battery Connection Train Line Dev2/76 = Coupler pin 012 Dev2/80 = Coupler pin 112 Dev5/79 = END2 90XP14 pin 30 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10068 | R | Read Defined Variable [NI] Dev2/76 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC2 |
| 10069 | R | Read Defined Variable [NI] Dev2/80 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC2 |
| 10070 | R | Read Defined Variable [NI] Dev5/79 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC2 |

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| 10071 | I | Battery Disconnection Train Line Dev2/77 = Coupler pin 027 Dev2/40 = Coupler pin 127 Dev5/75 = END2 90XP14 pin 31 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10072 | R | Read Defined Variable [NI] Dev2/77 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC2 |
| 10073 | R | Read Defined Variable [NI] Dev2/40 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC2 |
| 10074 | R | Read Defined Variable [NI] Dev5/75 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC2 |
| 10075 | I | AC address coding and Shore Supply Mode | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10076 | A | Use the AGATE to shut down the train | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10077 | A | Remove connector -18XP11_1 from the Auxiliary Converter | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10078 | A | Check continuity between pins 51 and 52 ; and pins 63 and 64 on connector 18XP11_1 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10079 | R | Pins 51 and 52 are continuous; and pins 63 and 64 are continuous | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10080 | A | Switch ON the IES Status on the test bench to make available the IES STATUS signal in the Auxiliary Converter | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10081 | R | Check continuity between point 65 and point 70 (IES STATUS) on connector - 18XP11_1 from the Auxiliary Converter (ACU) | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10082 | A | Return the connector -18XP11_1 into the Auxiliary Converter | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10083 | A | Turn Switch "27S1" (Backup Mode Position) to 'Normal Mode' | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10084 | I | Turn the ACU Isolation Switch 18S3 to "Normal" position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10085 | A | Turn Battery Contactor Switch "18S1" to ON Position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10086 | I | In LV1 , check the voltage on point 2 of CB 18Q1 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10087 | R | Voltage on point 2 of CB 18Q1 | | OK | 109.3 | Siphesihle Mchunu - 491465 | TC2 |

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| 10088 | I | NOTE: When shore supply is connected to Auxiliary 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 | | Siphesihle Mchunu - 491465 | TC2 |
| 10089 | A | Ensure shore supply power source is off. Input Shore Supply Connector on Auxiliary Converter and switch it on | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10090 | R | Auxiliary Converter is working | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10091 | R | In LV1 , check the voltage on point 2 of CB 18Q1, compare with the value read before, and see that the new value is higher than before | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10092 | 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 | | Siphesihle Mchunu - 491465 | TC2 |
| 10093 | R | Phase rotation between U,V,W is correct | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10094 | R | Check 230Vac between points L and N of the plug -13XT2 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10095 | R | Check 230Vac between points L and N of the plug -13XT3 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10096 | A | Switch off the shore supply power source and remove the external shore supply | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10097 | A | Switch OFF the IES Status on the test bench to normalize the lines of status signal (IES STATUS) | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10098 | R | The battery is no longer being charged | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10099 | R | Check 0Vac between points L and N of the plug -13XT2 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10100 | R | Check 0Vac between points L and N of the plug -13XT3 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10101 | I | Battery Disconnection | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10102 | A | Turn Driver's Master Key 30A1.S1 to Non Active Cabin | | OK | | Siphesihle Mchunu - 491465 | TC2 |

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| 10103 | R | Battery is still connected to the Normal Line | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10104 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10105 | A | Turn Switch "27S1" (Backup Mode Position) to 'Back up Mode' | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10106 | I | Battery Disconnection Train Line Dev4/75 = END2 90XP14 pin 31 Dev2/77 = Coupler pin 027 Dev2/40 = Coupler pin 127 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10107 | A | Force [NI] Dev4/75 = 1.0 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10108 | R | Read Defined Variable [NI] Dev2/77 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC2 |
| 10109 | R | Read Defined Variable [NI] Dev2/40 = 1.0 | | OK | 1 | Siphesihle Mchunu - 491465 | TC2 |
| 10110 | R | The Normal Line is disconnected from the battery | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10111 | I | Battery Disconnection Train Line Dev4/75 = END2 90XP14 pin 31 Dev2/77 = Coupler pin 027 Dev2/40 = Coupler pin 127 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10112 | A | Force [NI] Dev4/75 = 0.0 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10113 | R | Read Defined Variable [NI] Dev2/77 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC2 |
| 10114 | R | Read Defined Variable [NI] Dev2/40 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC2 |
| 10115 | I | Battery Connection Train Line Dev2/76 = Coupler pin 012 Dev2/80 = Coupler pin 112 Dev5/79 = END2 90XP14 pin 30 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10116 | R | Read Defined Variable [NI] Dev2/76 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC2 |
| 10117 | R | Read Defined Variable [NI] Dev2/80 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC2 |
| 10118 | R | Read Defined Variable [NI] Dev5/79 = 0.0 | | OK | 0 | Siphesihle Mchunu - 491465 | TC2 |
| 10119 | A | Turn Battery Contactor Switch 18S1 to ON Position | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10120 | I | Shore Supply Power ON | | OK | | Siphesihle Mchunu - 491465 | TC2 |

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| 10121 | A | Turn the IES STATUS toggle switch on the Testbench into IES2 | | OK | | Siphesihle Mchunu - 491465 | TC2 |
| 10122 | A | Ensure shore supply power source is off. Input Shore Supply Connector on Auxiliary Converter and switch it on | | OK | | Siphesihle Mchunu - 491465 | TC2 |



Serial Tests Report
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Section 4 – TCMS Network

4.3 Instructions list

4.3.1 025_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 | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10002 | I | Initial conditions | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10003 | I | Backup Mode Switch 27S1 in "Normal" Position | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10004 | I | Car should be prepared (Battery contactor switch 18S1 in ON position) | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10005 | I | Vehicle test bench should be configured as TC1: 1. TC1 Data plugs 2. MCE switch set to TC1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10006 | I | The test bench should be connected to the vehicle | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10007 | I | Power supply to the 25A2 BRIOM 32/16 ETH 2 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10008 | A | Close Circuit Breaker 25Q2 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10009 | R | BRIOM 25A2 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10010 | A | Check visually that ground braid is connected to BRIOM | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10011 | I | Power supply to the 25A3 BRIOM 32/16 ETH 3 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10012 | A | Close Circuit Breaker 25Q3 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10013 | R | BRIOM 25A3 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10014 | A | Check visually that ground braid is connected to BRIOM | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10015 | I | Power supply to the 25A4 BRIOM 32/16 ETH 4 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10016 | A | Close Circuit Breaker 25Q4 | | OK | | Nqobile Chirwa - 484648 | TC2 |

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| 10017 | R | BRIOM 25A4 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10018 | A | Check visually that ground braid is connected to BRIOM | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10019 | I | Power supply to the 25A5 BRIOM 32/16 ETH 5 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10020 | A | Close Circuit Breaker 25Q5 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10021 | R | BRIOM 25A5 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10022 | A | Check visually that ground braid is connected to BRIOM | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10023 | I | Power supply to the 25A6 BRIOM 32/16 ETH 6 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10024 | A | Close Circuit Breaker 25Q6 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10025 | R | BRIOM 25A6 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10026 | A | Check visually that ground braid is connected to BRIOM | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10027 | I | Power supply to the 25A7 BRIOM 32/16 ETH 7 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10028 | A | Close Circuit Breaker 25Q7 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10029 | R | BRIOM 25A7 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10030 | A | Check visually that ground braid is connected to BRIOM | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10031 | I | Power supply to the 25A11 SWITCH ETHERNET (CRS2) | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10032 | A | Close Circuit Breaker 25Q11 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10033 | R | CRS2 25A11 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10034 | I | Power supply to the 25A12 SWITCH ETHERNET (CRS3) | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10035 | A | Close Circuit Breaker 25Q12 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10036 | R | CRS3 25A12 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |

| | | | | | | | |
|-------|---|---|---|----|--|-------------------------|-----|
| 10037 | I | Power supply to the 25A15 TRAIN ROUTER SWITCH (TRS) | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10038 | A | Close Circuit Breaker 25Q15 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10039 | R | TRS 25A15 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10040 | A | Close Circuit Breaker 25Q14 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10041 | A | Close Circuit Breaker 25Q10 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10042 | I | Power supply to the 25A10 SWITCH ETHERNET (CRS1) | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10043 | R | CRS1 25A10 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10044 | I | Power supply to the 25A14 ETHERNET REPEATER (TBR) | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10045 | R | TBR 25A14 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10046 | I | Power supply to the 25A17 DDU ACE | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10047 | A | Close Circuit Breaker 25Q17 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10048 | R | The DDU is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10049 | I | DDU Software Upload | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10050 | I | Perform the following procedure to upload software on the DDU |  | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10051 | I | Ethernet Loop | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10052 | A | Check that the LED on ETH0 of the TBR is flashing | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10053 | R | The TBR has LED on port ETH0 flashing | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10054 | A | For each CRS, check that the LEDs on ports X3 and X4 are flashing | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10055 | R | CRS1 has LEDs on ports X3 and X4 flashing | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10056 | R | CRS2 has LEDs on ports X3 and X4 flashing | | OK | | Nqobile Chirwa - 484648 | TC2 |

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|-------|---|--|--|----|--|-------------------------|-----|
| 10057 | R | CRS3 has LEDs on ports X3 and X4 flashing | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10058 | A | Check that the TRS has LEDs on ports ETH4 and ETH5 flashing | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10059 | R | The TRS has LEDs on ports ETH4 and ETH5 flashing | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10060 | R | Check on the DDU that all Router Switches are available on the network | | OK | | Nqobile Chirwa - 484648 | TC2 |



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Document Reference
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Version: A0

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Section 5 – Cabin Control

5.3 Instructions list

5.3.1 020_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 | | Nqobile Chirwa - 484648 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10003 | I | Vehicle test bench should be configured as TC1: 1. TC1 Data plugs 2. MCE should reflect as MPU1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10004 | I | Shore Supply is connected and ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10005 | I | Car should be prepared | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10006 | I | Cabin should be active | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10007 | I | Use the voltage detector/ magnetic stick to check whether a relay is energized or not | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10008 | I | Normal Mode - Active Cabin | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10009 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2masterkey__1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10010 | I | Cab Active TC2 Train Line Dev5/2 = END2 90XP14 pin 4 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10011 | R | Read Defined Variable [NI] Dev5/2 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10012 | I | Master Key TC2 Train Line Dev5/17 = END2 90XP14 pin 17 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10013 | R | Read Defined Variable [NI] Dev5/17 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10014 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelayr1__1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10015 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelayr2__1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10016 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelayr3 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |

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|-------|---|---|--|----|---|----------------------------|-----|
| 10017 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2KeyRelayR4 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10018 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10019 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR2 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10020 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR3 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10021 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR4 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10022 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR5 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10023 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2cabinactiveno = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10024 | A | Force [TT] (MPU1)lo_cab_tc2cabdisconnectr1 = 1.0 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10025 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10026 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR2 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10027 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR3 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10028 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR4 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10029 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR5 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10030 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2cabinactiveno = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10031 | I | Cab Active TC2 Train Line Dev5/2 = END2 90XP14 pin 4 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10032 | R | Read Defined Variable [NI] Dev5/2 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10033 | A | Force [TT] (MPU1)lo_cab_tc2cabdisconnectr1 = 0.0 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10034 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |

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|-------|---|--|--|----|---|-------------------------|-----|
| 10035 | I | Normal Mode - Non-Active Cabin - 20K2 Memory | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10036 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10037 | I | Master Key TC2 Train Line Dev5/17 = END2 90XP14 pin 17 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10038 | R | Read Defined Variable [NI] Dev5/17 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10039 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2masterkey__1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10040 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelayr1__1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10041 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelayr2__1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10042 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2keyrelayr3 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10043 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2KeyRelayR4 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10044 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10045 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR2 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10046 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR3 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10047 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR4 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10048 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR5 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10049 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2cabinactiveno = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10050 | A | Force [TT] (MPU1)lo_cab_tc2cabdisconnectr2 = 1.0 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10051 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10052 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2CabinActiveR2 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |

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|-------|---|--|--|----|---|----------------------------|-----|
| 10053 | R | Read Defined Variable [TT] (MPU1)li_CAB_Tc2CabinActiveR3 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10054 | R | Read Defined Variable [TT] (MPU1)li_CAB_Tc2CabinActiveR4 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10055 | R | Read Defined Variable [TT] (MPU1)li_CAB_Tc2CabinActiveR5 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10056 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2cabinactiveno = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10057 | A | Release [TT] (MPU1)lo_cab_tc2cabdisconnectr1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10058 | A | Release [TT] (MPU1)lo_cab_tc2cabdisconnectr2 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10059 | I | Other Cab Active | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10060 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2othercabinactive__1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10061 | I | Cab Selected on Train Line Dev4/1 = END2 90XP14 pin 3 Dev2/1 = COUPLER pin 040 Dev2/2 = COUPLER pin 140 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10062 | A | Force [NI] Dev4/1 = 1.0 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10063 | R | Read Defined Variable [NI] Dev2/1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10064 | R | Read Defined Variable [NI] Dev2/2 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2othercabinactive__1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 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 | | Nqobile Chirwa - 484648 | TC2 |
| 10067 | A | Force [NI] Dev4/1 = 0.0 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10068 | R | Read Defined Variable [NI] Dev2/1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10069 | R | Read Defined Variable [NI] Dev2/2 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10070 | R | Read Defined Variable [TT] | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|---|-------------------------|-----|
| | | (MPU1)li_cab_tc2othercabinactive__1 = 1.0 | | | | | |
| 10071 | I | Backup Mode - Active Cabin | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10072 | A | Turn Switch '27S1' (Backup Mode Position) to 'BACKUP Position | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10073 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10074 | I | Cab Selected on Train Train Line Dev5/1 = END2 90XP14 pin 3 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10075 | R | Read Defined Variable [NI] Dev5/1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10076 | R | Check Relay "20K1" is Energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10077 | R | Check Relay "20K1a" is Energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10078 | R | Check Relay "20K1b" is Energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10079 | R | Check Relay "20K1c" is Energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10080 | R | Check Relay "20K2" is Energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10081 | R | Check Relay "20K11" is Energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10082 | R | Check Relay "20K12a" is Energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10083 | R | Check Relay "20K12b" is Energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10084 | R | Check Relay "20K10b" is Energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10085 | I | Backup Mode- Non-Active Cabin | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10086 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10087 | I | Cab Selected on Train Train Line Dev5/1 = END2 90XP14 pin 3 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10088 | R | Read Defined Variable [NI] Dev5/1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10089 | R | Check Relay "20K1" is De-energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10090 | R | Check Relay "20K1a" is De-energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10091 | R | Check Relay "20K1b" is De-energized | | OK | | Nqobile Chirwa - 484648 | TC2 |

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|-------|---|--|--|----|---|-------------------------|-----|
| 10092 | R | Check Relay "20K1c" is De-energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10093 | R | Check Relay "20K2" is De-energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10094 | R | Check Relay "20K11" is De-energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10095 | R | Check Relay "20K12a" is De-energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10096 | R | Check Relay "20K12b" is De-energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10097 | R | Check Relay "20K10b" is De-energized | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10098 | I | Automatic Start | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10099 | A | Turn Battery Contactor Switch 18S1" to OFF position | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10100 | A | Turn Switch '27S1' (Backup Mode Position) to 'Normal' Position | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10101 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10102 | A | Turn Battery Contactor Switch 18S1" to ON position - Allow time for TCMS to start up | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10103 | A | Close Circuit Breaker 84Q1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10104 | A | Press and hold the Automatic Start Pushbutton 20S1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10105 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2automaticstartr1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10106 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2automaticstartr2 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10107 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc2automaticstartr1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10108 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc2automaticstartr2 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10109 | R | Check that the pushbutton lamp on 20S1 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10110 | A | Release the Automatic Start Pushbutton 20S1 | | OK | | Nqobile Chirwa - 484648 | TC2 |

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|-------|---|--|--|----|---|----------------------------|-----|
| 10111 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2automaticstartr1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10112 | R | Read Defined Variable [TT] (MPU1)li_cab_tc2automaticstartr2 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10113 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc2automaticstartr1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10114 | R | Read Defined Variable [TT] (MPU1)lo_cab_tc2automaticstartr2 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10115 | I | Standby Mode | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10116 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10117 | A | Press and hold the Standby State pushbutton 20S2 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10118 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2ISMR1__1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10119 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2ISMR2__1 = 1.0 | | OK | 1 | Nqobile Chirwa - 484648 | TC2 |
| 10120 | A | Release the Standby State pushbutton 20S2 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10121 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2ISMR1__1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10122 | R | Read Defined Variable [TT] (MPU1)Li_CAB_Tc2ISMR2__1 = 0.0 | | OK | 0 | Nqobile Chirwa - 484648 | TC2 |
| 10123 | A | Force [TT] (MPU1)lo_cab_tc2ismlamp = 1.0 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10124 | R | The Standby State pushbutton lamp 20S2 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10125 | A | Release [TT] (MPU1)lo_cab_tc2ismlamp | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10126 | R | The Standby State pushbutton lamp 20S2 is OFF | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10127 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Nqobile Chirwa - 484648 | TC2 |



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TS221 – TC2 – VFT
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Section 6 – Internal Lighting

6.3 Instructions list

6.3.1 052_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=052) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10003 | I | Car should be prepared | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10004 | I | Key 30A1.S1 should be in Active Cabin position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10005 | I | Circuit Breakers | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10006 | A | Close Circuit Breaker 52Q1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10007 | A | Close Circuit Breaker 52Q2 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10008 | A | Close Circuit Breaker 52Q3 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10009 | A | Close Circuit Breaker 52Q4 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10010 | A | Close Circuit Breaker 52Q5 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10011 | A | Close Circuit Breaker 52Q6 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10012 | I | Cab Ceiling Lighting | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10013 | A | Turn battery contactor switch 18S1 to OFF position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10014 | A | Wait 3 minutes for cab lights to switch off | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10015 | R | All cabin ceiling lights are OFF (52U40, 52U41,52U42) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10016 | R | Both cab ceiling light pushbutton lamps are OFF (52S3 Left and 52S4 Right) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10017 | A | Push the cab lighting LEFT side button (52S3) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10018 | I | Wait 3 minutes for the lights to turn off. Continue with the following steps while | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |

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|-------|---|---|--|----|--|------------------------------------|-----|
| | | waiting | | | | | |
| 10019 | R | Cabin ceiling light 52U40 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10020 | R | Cabin ceiling light 52U41 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10021 | R | Cabin ceiling light 52U42 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10022 | R | Left pushbutton lamp 52S3 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10023 | R | Right pushbutton lamp 52S4 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10024 | A | Press and hold the cab lighting LEFT side button (52S3) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10025 | R | The intensity of cabin ceiling light 52U40 decreases | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10026 | R | The intensity of cabin ceiling light 52U41 decreases | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10027 | R | The intensity of cabin ceiling light 52U42 decreases | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10028 | A | Release cab lighting LEFT side button (52S3) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10029 | I | After the 180s (3 min) timer is expired | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10030 | R | Cabin ceiling light 52U40 is OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10031 | R | Cabin ceiling light 52U41 is OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10032 | R | Cabin ceiling light 52U42 is OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10033 | R | Left pushbutton lamp 52S3 is OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10034 | R | Right pushbutton lamp 52S4 is OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10035 | A | Push the cab lighting RIGHT side button (52S4) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10036 | R | Cabin ceiling light 52U40 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10037 | R | Cabin ceiling light 52U41 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10038 | R | Cabin ceiling light 52U42 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |

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|-------|---|--|--|----|--|---------------------------------|-----|
| 10039 | R | Right pushbutton lamp 52S4 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10040 | A | Push the cab lighting RIGHT side button (52S4) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10041 | R | Cabin ceiling light 52U40 is OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10042 | R | Cabin ceiling light 52U41 is OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10043 | R | Cabin ceiling light 52U42 is OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10044 | R | Right pushbutton lamp 52S4 is OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10045 | I | Turn battery contactor switch 18S1 to ON position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10046 | R | In the saloon, all RIGHT side emergency lights are ON on all light modules | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10047 | R | In the saloon, all LEFT side emergency lights are ON on all light modules | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10048 | R | Both cab ceiling light pushbutton lamps are OFF (52S3 Left and 52S4 Right) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10049 | A | Press and hold the cab lighting RIGHT side button (52S4) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10050 | R | The intensity of cabin ceiling light 52U40 decreases | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10051 | R | The intensity of cabin ceiling light 52U41 decreases | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10052 | R | The intensity of cabin ceiling light 52U42 decreases | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10053 | A | Release cab lighting LEFT side button (52S4) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10054 | A | Open Circuit Breaker 52Q6 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10055 | A | Press and hold the Lamp Test pushbutton 84S1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10056 | R | Both cab ceiling light pushbutton lamps are ON (52S3 Left and 52S4 Right) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10057 | A | Release the Lamp Test pushbutton 84S1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |

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|-------|---|---|--|----|---|---------------------------------|-----|
| 10058 | R | Both cab ceiling light pushbutton lamps are OFF (52S3 Left and 52S4 Right) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10059 | A | Close Circuit Breaker 52Q6 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10060 | I | Cleaning Light Command | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10061 | I | Turn battery contactor switch 18S1 to OFF position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10062 | A | Turn Cleaning Staff Lights Switch 52S6 to ON position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10063 | I | Lighting 33% Train Line Dev5/8 = END2 90XP15 pin 27 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10064 | R | Read Defined Variable [NI] Dev5/8 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10065 | R | The saloon RIGHT side emergency lights (low intensity) are ON on all light modules | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10066 | R | The saloon LEFT side emergency lights (low intensity) are ON on all light modules | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10067 | A | Open Circuit Breaker 52Q5 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10068 | I | Lighting 33% Train Line Dev5/8 = END2 90XP15 pin 27 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10069 | R | Read Defined Variable [NI] Dev5/8 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10070 | R | The saloon RIGHT side emergency lights (low intensity) are OFF on all light modules | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10071 | R | The saloon LEFT side emergency lights (low intensity) are OFF on all light modules | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10072 | A | Close Circuit Breaker 52Q5 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10073 | I | Main Light Command | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10074 | A | Turn Cleaning Staff Lights Switch 52S6 to ON position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10075 | I | Lighting 33% Train Line Dev5/8 = END2 90XP15 pin 27 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10076 | R | Read Defined Variable [NI] Dev5/8 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC2 |

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|-------|---|---|--|----|---|---------------------------------|-----|
| 10077 | R | All saloon emergency lights (low intensity) are ON on all light modules (Left+Right) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10078 | I | Turn battery contactor switch 18S1 to ON position - allow time for TCMS to initialize | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10079 | A | Force [TT] (MPU1)lo_lgt_tc2mainlgtcmd = 1.0 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10080 | I | Lighting 33% Train Line Dev5/8 = END2 90XP15 pin 27 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10081 | R | Read Defined Variable [NI] Dev5/8 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10082 | I | Main Lighting Command Train Line Dev5/24 = END2 90XP15 pin 26 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10083 | R | Read Defined Variable [NI] Dev5/24 = 1.0 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10084 | R | The saloon RIGHT side main lighting (high intensity) is ON on all light modules | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10085 | R | The saloon LEFT side main lighting (high intensity) is ON on all light modules | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10086 | A | Release [TT] (MPU1)lo_lgt_tc2mainlgtcmd | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10087 | I | Main Lighting Command Train Line Dev5/24 = END2 90XP15 pin 26 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10088 | R | Read Defined Variable [NI] Dev5/24 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10089 | I | Lighting 33% Train Line Dev5/8 = END2 90XP15 pin 27 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10090 | R | Read Defined Variable [NI] Dev5/8 = 0.0 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10091 | R | All saloon emergency lights (low intensity) are ON on all light modules (Left+Right) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |



Serial Tests Report
TS221 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

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Section 7 – PACIS System

7.3 Instructions list

7.3.1 054_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 | | Nqobile Chirwa - 484648 | TC2 |
| 10002 | I | Initial conditions | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10003 | I | Car must be prepared - battery contactor 18S1 closed | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10004 | I | Circuit Breakers | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10005 | A | Close Circuit Breaker 54Q1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10006 | A | Close Circuit Breaker 54Q2 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10007 | A | Close Circuit Breaker 54Q3 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10008 | A | Close Circuit Breaker 54Q10 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10009 | A | Close Circuit Breaker 54Q11 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10010 | A | Close Circuit Breaker 54Q13 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10011 | A | Close Circuit Breaker 54Q15 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10012 | A | Close Circuit Breaker 55Q1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10013 | A | Close Circuit Breaker 55Q2 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10014 | A | Close Circuit Breaker 55Q3 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10015 | I | Train Router Switch 'TRS' | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10016 | R | TRS1 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10017 | I | Power Supply to UMC Rack | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10018 | R | All cards on the UMC Rack are ON - PS, EBM, DPC-IOC, NVR, Media Server | | OK | | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10019 | I | Driver Control Panel | | OK | | Nqobile Chirwa - 484648 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|------|---------------------------------------|-----|
| 10020 | R | Driver Control Panel is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10021 | I | Ethernet Switch 'CRS1' | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10022 | R | CRS1 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10023 | I | DPAL-1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10024 | R | DPAL-1 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10025 | I | DPAL-2 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10026 | R | DPAL-2 is ON | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10027 | I | Impedance of Loudspeaker | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10028 | I | Saloon Speakers Commanded by DPAL-1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10029 | A | Measure the impedance on connector '54XP1_X4' between pins: z 32 (+) and z30 (-) | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10030 | R | Impedance Result Max : x <= 24 () | | OK | 23.7 | Hlawulani Nick Mabundzane - 418320 | TC2 |
| 10031 | I | Saloon Speakers Commanded by DPAL-2 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10032 | A | Measure the impedance on connector '54XP2_X4' between pins: z32(+) and z30 (-) | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10033 | R | Impedance Result Max : x <= 32 () | | OK | 30.5 | Nqobile Chirwa - 484648 | TC2 |
| 10034 | I | Front Display 'FRT1' | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10035 | R | The PWR (power) LED is ON on the Front Display FRT1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10036 | I | Lateral Display 'LAT1' | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10037 | R | The PWR (power) LED is ON on the Lateral Display LAT1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10038 | I | Lateral Display 'LAT2' | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10039 | R | The PWR (power) LED is ON on the Lateral Display LAT2 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10040 | I | Interior Display 'INT1' | | OK | | Nqobile Chirwa - 484648 | TC2 |

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|-------|---|--|--|----|--|-------------------------|-----|
| 10041 | R | The PWR (power) LED is ON on the Interior Display INT1 | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10042 | I | Interior Display 'INT2' | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10043 | R | The PWR (power) LED is ON on the Interior Display INT2 | | OK | | Nqobile Chirwa - 484648 | TC2 |



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Section 8 – Dead Man

8.3 Instructions list



8.3.1 060_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 | | Celiwe Sokhela - 491462 | TC2 |
| 10002 | I | Initial conditions | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10003 | I | TC car is in service and cabin should be active | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10004 | A | Position the "Dead Man Override" switch to "Normal" position. | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10005 | I | Circuit Breakers | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10006 | A | Close Circuit Breaker 60Q1 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10007 | A | Close Circuit Breaker 30Q3 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10008 | I | Buzzer 60W1 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10009 | A | Force [TT] (MPU1)lo_dsd_tc2dmbuzzerr1 = 1.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10010 | R | The buzzer 60W1 is ON. A noise coming from the buzzer can be clearly heard in the cabin. | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10011 | A | Release [TT] (MPU1)lo_dsd_tc2dmbuzzerr1 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10012 | R | The buzzer 60W1 is OFF. No noise coming from buzzer. | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10013 | A | Force [TT] (MPU1)lo_dsd_tc2dmbuzzerr2 = 1.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10014 | R | The buzzer 60W1 is ON. A noise coming from the buzzer can be clearly heard in the cabin. | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10015 | A | Release [TT] (MPU1)lo_dsd_tc2dmbuzzerr2 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10016 | R | The buzzer 60W1 is OFF. No noise coming from buzzer. | | OK | | Celiwe Sokhela - 491462 | TC2 |

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|-------|---|--|----|----|---|-------------------------|-----|
| 10017 | I | Dead Man Lamp | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10018 | A | Position the Running Direction switch to "FORWARD" | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10019 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10020 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr2 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10021 | A | Position the Running Direction switch 30A1.S1 in "Neutral" | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10022 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10023 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr2 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10024 | R | On the alarm module, check the Dead man deactivated symbol is OFF. | DM | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10025 | A | Force [TT] (MPU1)lo_dsd_tc2deadmanlampr1 = 1.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10026 | R | On the alarm module, check the Dead man deactivated symbol is ON | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10027 | A | Release [TT] (MPU1)lo_dsd_tc2deadmanlampr1 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10028 | R | On the alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10029 | A | Force [TT] (MPU1)lo_dsd_tc2deadmanlampr2 = 1.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10030 | R | On the alarm module, check the Dead man deactivated symbol is ON | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10031 | A | Release [TT] (MPU1)lo_dsd_tc2deadmanlampr2 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10032 | R | On alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Celiwe Sokhela - 491462 | TC2 |

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|-------|---|--|----|----|---|-------------------------|-----|
| 10033 | I | DSD function | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10034 | A | Position the Running Direction switch to "FORWARD" | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10035 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10036 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr2 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10037 | A | Timer 5.0 S | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10038 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10039 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr2 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10040 | R | On alarm module, check the Dead man deactivated symbol is ON | DM | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10041 | A | Press and hold the dead man button 60S3 on the driver desk | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10042 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10043 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanr1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10044 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanr2 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10045 | R | On the alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10046 | A | Release the dead man button 60S3 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10047 | A | Timer 5.0 S | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10048 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10049 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanr1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |

| | | | | | | | |
|-------|---|---|---|----|---|----------------------------|-----|
| 10050 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanr2 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10051 | R | On alarm module, check the Dead Man deactivated symbol is ON | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10052 | A | Press and hold the dead man switch, which is positioned on master controller. | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10053 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10054 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanr1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10055 | R | On the alarm module, check the Dead man deactivated symbol is OFF. | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10056 | A | Release the dead man button on the master controller | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10057 | A | Timer 5.0 S | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10058 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10059 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanr1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10060 | R | On alarm module, check the Dead Man deactivated symbol is ON | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10061 | I | DSD Override indication | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10062 | R | On the alarm module, verify that the Dead Man override (60H2) symbol is OFF. |  | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10063 | A | Press and hold dead man button 60S3 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10064 | A | Position the "Dead Man Override" switch to "Override" position (do not release the dead man device actuated in the previous step). | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10065 | R | On the alarm module, verify that the Dead Man override (60H2) symbol is ON |  | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10066 | R | Read Defined Variable [TT] | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |

| | | | | | | | |
|-------|---|---|---|----|---|-------------------------|-----|
| | | (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 1.0 | | | | | |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanoverridr1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10068 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanoverridr2 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10069 | A | Release the dead man button | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10070 | R | On the alarm module, verify that the Dead Man override (60H2) symbol is ON |  | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10071 | A | Position the "Dead Man Override" switch to "Normal" position. | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10072 | R | On the alarm module, verify that the Dead Man override (60H2) symbol is OFF | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10073 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanoverridr1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10074 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2deadmanoverridr2 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10075 | R | On alarm module, check the Dead man deactivated (60H1) symbol is ON | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10076 | A | Position the Running Direction switch 30A1.S1 in "Neutral" | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10077 | R | On alarm module, check the Dead man deactivated symbol is OFF | | OK | | Celiwe Sokhela - 491462 | TC2 |



Serial Tests Report
TS221 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

Document Reference
GIB0000006455
Version: A0


Emission date
14/05/2024

Section 9 – External Signaling



9.3 Instructions list

9.3.1 070_SIG-External Signaling

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 | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10002 | I | Use the image below for reference throughout the procedure |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10003 | I | Initial Conditions | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10004 | A | Turn IES switch on Test bench to ON position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10005 | I | Shore Supply is connected to the car | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10006 | I | TC1 car prepared and cab active | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10007 | I | Circuit Breakers | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10008 | A | Close Circuit Breaker 70Q1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10009 | A | Close Circuit Breaker 70Q2 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10010 | A | Close Circuit Breaker 70Q3 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10011 | A | Close Circuit Breaker 72Q4 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10012 | A | Close Circuit Breaker 75Q1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10013 | A | Close Circuit Breaker 72Q2 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10014 | I | Left Platform and Head Lights | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10015 | A | Check that the following external lights on the LEFT are ON: | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10016 | R | Platform lights 70H12 white LEDs | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10017 | R | Platform lights 70H5 while light | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10018 | R | Head lights 70H3 white light | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10019 | I | Right Platform and Head Lights | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|---|---------------------------------|-----|
| 10020 | A | Check that the following external lights on the RIGHT are on: | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10021 | R | Platform lights 70H11 white LEDs | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10022 | R | Platform lights 70H6 while light | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10023 | R | Head lights 70H4 white light | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10024 | I | Back Lights | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10025 | A | Turn key 30A1.S1 to Non-Active Cabin Position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10026 | A | Reset Circuit Breaker 20Q2 (On and Off) | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10027 | R | All white lights, on the LEFT and Right side are OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10028 | R | Left red light 70H7 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10029 | R | Right red light 70H9 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10030 | R | Red LEDs on Platform light 70H11 are ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10031 | I | Main lights and Dimming | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10032 | A | Switch the External lights switch 70S2 to "Bright Light" position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10033 | R | The External lights switch 70S2 lamp is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10034 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc2headlight1 = 0.00 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10035 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc2headlight2 = 0.00 | | OK | 0 | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10036 | R | The headlights 70H3 and 70H4 are in bright light configuration | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10037 | A | Switch the External lights switch 70S2 to "Normal" or "Dimmed" position | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10038 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc2headlight1 = 1.00 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC2 |

| | | | | | | | |
|-------|---|--|---|----|---|---------------------------------|-----|
| 10039 | R | Read Defined Variable [TT] (MPU1)li_sgl_tc2headlight2 = 1.00 | | OK | 1 | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10040 | R | The External lights switch lamp 70S2 is OFF | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10041 | R | The headlights 70H3 and 70H4 are in normal/dimmed configuration | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10042 | I | Sunshade adjustment settings | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10043 | 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 | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10044 | 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 | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10045 | 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 | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10046 | A | Turn the Sunshade Control Switch 72S3 to position 1 (Up) and maintain it | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10047 | R | The sunshade stops at the upper position that was set above. | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10048 | 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 | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10049 | A | Turn the Sunshade Control Switch 72S3 to position 2 (down) and maintain it | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10050 | R | The sunshade stops at the lower position that was set above. | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |

9.3.2 070_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 | | Sithembile Xulu - 416253 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10003 | I | The air in the main pipe should be at least 4 bar | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10004 | I | Start of Test | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10005 | I | The pressure setting of point H1.12 must be set to 4 bar | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10006 | R | Enter the value measured above | | OK | 4 | Sithembile Xulu - 416253 | TC2 |
| 10007 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR1 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10008 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR2 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10009 | A | Press the foot pedal 57A13.S1 to actuate the horn and maintain it | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10010 | R | Horn sound can be heard at 100m distance from the cab | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10011 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR1 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10012 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR2 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10013 | A | Release the foot heater pedal | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10014 | R | Horn sound stops | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10015 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR1 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|---|--------------------------|-----|
| 10016 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningHootersR2 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10017 | A | Actuate the low pitch horn by pressing down the valve H1.3.1 under the driver's desk | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10018 | R | The horn sound can be heard in low pitch | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10019 | A | Release the valve H1.3.1 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10020 | R | Horn sound stops | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10021 | I | Electric Horn Test | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10022 | A | Press the button 71S1 and maintain it | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10023 | R | The sound of the whistle can be heard at least 20m from the cab | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10024 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningWhistleR1 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10025 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningWhistleR2 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10026 | A | Release the button 71S1 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10027 | R | Whistle sound stops | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10028 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningWhistleR1 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10029 | R | Read Defined Variable [TT] (MPU1)Li_SGL_Tc2WarningWhistleR2 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |

Section 10 – Rescue Mode and Emergency Disconnection

10.3 Instructions list

10.3.1 027_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=027) | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10003 | I | Car is powered OFF | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10004 | I | Backup Mode | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10005 | A | Turn Switch 27S1 (Backup Mode Position) to 'BACKUP Position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10006 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10007 | A | Turn Battery contactor Switch 18S1 to ON position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10008 | I | Backup Mode Train Lines Dev5/33 = END2 90XP15 pin 23 Dev2/67 = Coupler pin 007 Dev2/25 = Coupler pin 107 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10009 | R | Read Defined Variable [NI] Dev5/33 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10010 | R | Read Defined Variable [NI] Dev2/25 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10011 | R | Read Defined Variable [NI] Dev2/67 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10012 | R | Relay 27K1 is energized | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10013 | R | Relay 27K2 is De-energized | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10014 | A | Timer 30.0 S | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10015 | R | Relay 27K2 is energized | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10016 | I | Check that the Backup mode LED 27H2 is ON |  | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10017 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Celiwe Sokhela - 491462 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|---|----------------------------|-----|
| 10018 | I | Backup Mode Train Lines Dev5/33 = END2 90XP15 pin 23 Dev2/67 = Coupler pin 007 Dev2/25 = Coupler pin 107 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10019 | R | Read Defined Variable [NI] Dev5/33 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10020 | R | Read Defined Variable [NI] Dev2/25 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10021 | R | Read Defined Variable [NI] Dev2/67 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10022 | R | Relay 27K1 is De-energized | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10023 | R | Relay 27K2 is De-energized | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10024 | R | Check that the Backup mode LED 27H2 is OFF | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10025 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10026 | A | Turn Battery contactor Switch 18S1 to OFF position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10027 | A | Turn Switch '27S1' (Backup Mode Position) to Normal Position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10028 | I | Turn ERTMS Isolation Switch 62S1 to Normal position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10029 | A | Turn Battery contactor Switch 18S1 to ON position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10030 | A | Check continuity between point 20 on Backup State Switch 27S1 and ground | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10031 | R | The points are continuous. | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10032 | I | Backup Mode Train Line Dev5/33 = END2 90XP15 pin 23 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10033 | R | Read Defined Variable [NI] Dev5/33 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10034 | A | Force [TT] (BCU2)LO_SPEED_THRSLD1 = 0.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10035 | I | Emergency Disconnection | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10036 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 | | OK | | Celiwe Sokhela - 491462 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|---|----------------------------|-----|
| | | Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119 | | | | | |
| 10037 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10038 | R | Read Defined Variable [NI] Dev2/79 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10039 | R | Read Defined Variable [NI] Dev2/75 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10040 | I | Emergency Brake ERTMS 1 Train Line Dev4/88 = END2 90XP14 pin 18 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10041 | A | Force [NI] Dev4/88 = 1.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10042 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10043 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10044 | R | Read Defined Variable [NI] Dev2/79 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10045 | R | Read Defined Variable [NI] Dev2/75 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10046 | I | Emergency Brake ERTMS 2 Train Line Dev4/80 = END2 90XP14 pin 20 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10047 | A | Force [NI] Dev4/80 = 1.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10048 | I | Emergency Disconnection Train Lines Dev5/34 = END2 90XP15 pin 24 Dev2/79 = Coupler pin 019 Dev2/75 = Coupler pin 119 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10049 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10050 | R | Read Defined Variable [NI] Dev2/79 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10051 | R | Read Defined Variable [NI] Dev2/75 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10052 | I | Emergency Brake ERTMS 1 Train Line Dev4/88 = END2 90XP14 pin 18 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10053 | A | Force [NI] Dev4/88 = 0.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10054 | I | Emergency Brake ERTMS 2 Train Line Dev4/80 = END2 90XP14 pin 20 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10055 | A | Force [NI] Dev4/80 = 0.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|---|----------------------------|-----|
| 10056 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10057 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10058 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10059 | A | Force [NI] Dev4/39 = 1.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10060 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10061 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10062 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10063 | A | Force [NI] Dev4/39 = 0.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10064 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10065 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr2 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10068 | I | Place ERTMS Isolation Switch in "Isolation" position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10069 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10070 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10071 | A | Release [TT] (BCU2)LO_SPEED_THRSLD1 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10072 | A | Push the blue "Emergency Pantograph Down" pushbutton | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10073 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10074 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr2 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|---|----------------------------|-----|
| 10075 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10076 | R | Read Defined Variable [NI] Dev5/34 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10077 | A | Release the "Emergency Pantograph Down" pushbutton | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10078 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10079 | R | Read Defined Variable [TT] (MPU1)li_erm_tc2noemerdiscr2 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10080 | I | Emergency Disconnection Train Line Dev5/34 = END2 90XP15 pin 24 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10081 | R | Read Defined Variable [NI] Dev5/34 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |



Serial Tests Report
TS221 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

Document Reference
GIB0000006455
Version: A0

Emission date
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Section 11 – Driver Desk Illumination


11.3 Instructions list

11.3.1 084_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 | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10002 | I | Initial Conditions: | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10003 | I | Car is prepared and cab is active | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10004 | A | Close Circuit Breaker 81Q1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10005 | I | Indicator Modules | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10006 | R | Check that the Line Indicator Module 81A1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10007 | R | Check that the Pressure gauge 84P1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10008 | R | Check that the light of the Speed Indicator 61A2 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10009 | I | Lamp Test | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10010 | A | Press and hold the Lamp Test pushbutton 84S1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10011 | R | Check that the White Lamp Test pushbutton Lamp 84S1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10012 | R | Check that the White Automatic Start pushbutton lamp 20S1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10013 | R | Check that the Orange Standby State pushbutton lamp 20S2 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10014 | R | Check that the White Pantograph Up/Down pushbutton lamp 21S1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10015 | R | Check that the White Close Main Circuit Breaker pushbutton lamp 22S11 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10016 | R | Check that the Red Open Main Circuit Breaker pushbutton lamp 22S12 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |

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|-------|---|--|---|----|--|---------------------------------|-----|
| 10017 | R | Check that the White Reduced Power lamp 30S2 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10018 | R | Check that the Red Override Passenger Emergency Alarm pushbutton lamp 44S5 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10019 | R | Check that the Yellow Door Auth Left pushbutton lamp 50S5 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10020 | R | Check that the Yellow Door Auth Right pushbutton lamp 50S6 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10021 | R | Check that the White Door Open Left pushbutton lamp 50S1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10022 | R | Check that the White Door Open Right pushbutton lamp 50S2 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10023 | R | Check that the Blue Door Close Left pushbutton lamp 50S3 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10024 | R | Check that the Blue Door Close Right pushbutton lamp 50S4 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10025 | R | Check that the White Cab Lighting Left Side pushbutton lamp 52S3 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10026 | R | Check that the White Cab Lighting Right Side pushbutton lamp 52S4 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10027 | R | Check that the White Foot Heater pushbutton lamp 57S3 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10028 | R | Check that the Red Front CCTV Event pushbutton lamp 66S1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10029 | R | Check that the White Windscreen Demister pushbutton lamp 72S2 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10030 | I | Use the following image to verify the train status LEDs 84A1 |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10031 | R | Check that 31H1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10032 | R | Check that 60H1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10033 | R | Check that 18H1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10034 | R | Check that 44H4 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |

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|-------|---|--|---|----|--|---------------------------------|-----|
| 10035 | R | Check that 44H1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10036 | R | Check that 51H1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10037 | R | Check that 45H2 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10038 | R | Check that 40H2 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10039 | R | Check that 40H1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10040 | R | Check that 41H1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10041 | R | Check that 60H2 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10042 | R | Check that 27H2 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10043 | R | Check that 62H1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10044 | R | Check that 44H5 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10045 | R | Check that 31H2 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10046 | R | Check that 67H1 is ON | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10047 | A | Release the Lamp Test pushbutton 84S1 | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10048 | I | Dimmer Switch Adjustment | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 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 to identify the trimmer screw which is used to adjust the limits of the dimmer |  | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 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 | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10051 | A | Press the Lamp Test pushbutton 84S1 and maintain it | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10052 | A | While pressing 84S1, turn the dimmer switch and observe that the brightness of all the following lamps increases and decreases accordingly | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |

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|-------|---|---|--|----|--|---------------------------------|-----|
| 10053 | R | Check that 61A2 (Speed Indicator) can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10054 | R | Check that the Line Indicator Module 81A1 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10055 | R | Check that the Pressure gauge 84P1 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10056 | R | Check that the Train Status LEDs 84A1 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10057 | R | Check that 84S1 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10058 | R | Check that 20S1 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10059 | R | Check that 20S2 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10060 | R | Check that 21S1 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10061 | R | Check that 22S11 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10062 | R | Check that 22S12 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10063 | R | Check that 30S2 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10064 | R | Check that 44S5 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10065 | R | Check that 50S5 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10066 | R | Check that 50S6 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10067 | R | Check that 50S1 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10068 | R | Check that 50S2 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10069 | R | Check that 50S3 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10070 | R | Check that 50S4 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10071 | R | Check that 52S3 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10072 | R | Check that 52S4 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10073 | R | Check that 57S3 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10074 | R | Check that 66S1 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |

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|-------|---|-------------------------------|--|----|--|------------------------------------|-----|
| 10075 | R | Check that 67S1 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |
| 10076 | R | Check that 72S2 can be dimmed | | OK | | Goitsemodimo Kgatitswe - 526511 | TC2 |



Serial Tests Report
TS221 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

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Section 12 – Emergency Brake

12.3 Instructions list

12.3.1 044_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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10003 | I | No air connected to the vehicle OR main pipe pressure below 6Bar | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10004 | I | No PEAs are activated | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10005 | I | Battery Contactor Switch 18S1 in ON position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10006 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10007 | A | Open and Close (Reset) Circuit breaker 20Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10008 | I | Back Up mode switch 27S1 in Normal position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10009 | I | Direction Switch 30A1.S2 in "Neutral" position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10010 | I | Visual Inspection | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10011 | A | Physically and visually inspect all the Disk Break Units (DBU) and brake pads, to ensure they are securely fitted |  | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10012 | R | All the brake DBUs are correctly installed and all the brake pads are correctly installed and locked | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10013 | A | Check the pipe installation | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10014 | R | All the pipes are installed on the vehicle | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10015 | A | Check all the Passenger Emergency Alarm handles, and ensure they are connected to their respective connectors | | OK | | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|---|--|----|---|-------------------------|-----|
| 10016 | R | All the PEAs are installed and connected | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10017 | I | Circuit Breakers | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10018 | A | Close Circuit Breaker 44Q1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10019 | A | Close Circuit Breaker 44Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10020 | A | Close Circuit Breaker 44Q3 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10021 | A | Close Circuit Breaker 44Q4 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10022 | I | Emergency Brake Loop | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10023 | I | Emergency Brake Loop Train Line Dev2/3 = coupler pin 005 Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10024 | R | Read Defined Variable [NI] Dev2/3 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10025 | R | Read Defined Variable [NI] Dev2/4 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10026 | R | Read Defined Variable [NI] Dev5/5 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 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 C1.1 test point: B RTP | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10028 | R | The pressure on test point C 1.1 >=7 Bar | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10029 | I | Emergency Brake Loop Train Line Dev5/5 = END2 90XP14 pin 8 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10030 | R | Read Defined Variable [NI] Dev5/5 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10031 | A | Push the Emergency Brake Mushroom 44S1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10032 | I | Emergency Brake Loop Train Line Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10033 | R | Read Defined Variable [NI] Dev2/4 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10034 | R | Read Defined Variable [NI] Dev5/5 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|--|--|----|---|-------------------------|-----|
| 10035 | A | Release the Emergency Brake Mushroom 44S1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10036 | I | Emergency Brake Loop Train Line Dev5/5 = END2 90XP14 pin 8 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10037 | R | Read Defined Variable [NI] Dev5/5 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10038 | I | Coupling | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10039 | I | Coupling Relay Train Line Dev1/62 = coupler pin 103 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10040 | A | Force [NI] Dev1/62 = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10041 | R | Read Defined Variable [TT] (MPU1)Li_CPM_Tc2CoupDetec1 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10042 | I | Emergency Brake Loop Train Line Dev2/3 = coupler pin 005 Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10043 | R | Read Defined Variable [NI] Dev2/3 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10044 | R | Read Defined Variable [NI] Dev2/4 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10045 | R | Read Defined Variable [NI] Dev5/5 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10046 | I | Coupling Relay Train Line Dev1/62 = coupler pin 103 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10047 | A | Force [NI] Dev1/62 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10048 | R | Read Defined Variable [TT] (MPU1)Li_CPM_Tc2CoupDetec1 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10049 | I | Emergency Brake Loop Train Line Dev2/4 = coupler pin 105 Dev5/5 = END2 90XP14 pin 8 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10050 | R | Read Defined Variable [NI] Dev2/4 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10051 | R | Read Defined Variable [NI] Dev5/5 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10052 | I | Loop Override | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10053 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2ebloopoverrider1 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|--|---|----|---|----------------------------|-----|
| 10054 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2ebloopoverrider2 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10055 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10056 | A | Turn the Emergency Braking Loop Override Switch 44S2 to "Override/Bypass" position |  | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10057 | I | Emergency Brake Loop Override Train Line Dev5/6 = END2 90XP14 pin 9 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10058 | R | Read Defined Variable [NI] Dev5/6 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10059 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2ebloopoverrider1 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10060 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2ebloopoverrider2 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10061 | A | Return the Emergency Braking Loop Override Switch 44S2 to "Normal" position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10062 | R | Check that the Emergency Braking Loop Override Lamp 44H5 is OFF |  | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10063 | I | Emergency Brake Loop Override Train Line Dev5/6 = END2 90XP14 pin 9 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10064 | R | Read Defined Variable [NI] Dev5/6 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2ebloopoverrider1 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10066 | I | Reset Emergency Brake | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr1 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10068 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr2 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10069 | I | Turn Direction Switch 30A1.S2 to "Forward" position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10070 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr1 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10071 | I | Emergency Brake Train Line | | OK | | Sqiniseko Xulu - 493646 | TC2 |


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|-------|---|---|--|----|---|----------------------------|-----|
| 10072 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 8 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10073 | A | Force [NI] Dev4/5 = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10074 | A | Force [TT] (MPU1)lo_ubk_tc2emergbraker1 = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10075 | A | Press and hold the Dead Man pushbutton 60S3 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10076 | R | Read Defined Variable [TT] (MPU1)li_dsd_tc2ebdeadmanrelayr1 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10077 | A | Ensure the Master Controller S3.3 (3.4) is NOT in Emergency Brake position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10078 | I | Emergency Brake ERTMS1 Train Line Dev4/88 = END2 90XP14 pin 18 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10079 | A | Force [NI] Dev4/88 = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10080 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emergrelay1 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10081 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emergrelay2 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10082 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr1 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10083 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr2 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10084 | I | Emergency Brake ERTMS2 Train Line Dev4/80 = END2 90XP14 pin 20 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10085 | A | Force [NI] Dev4/80 = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10086 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emergrelay1 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10087 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emergrelay2 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10088 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr1 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10089 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2rearmebrelayr2 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|--|----|----|---|----------------------------|-----|
| 10090 | I | Emergency Brake Train Line Dev2/84 = coupler pin 038 Dev2/85 = coupler pin 138 Dev5/61 = END2 90XP15 pin 67 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10091 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10092 | R | Read Defined Variable [NI] Dev2/84 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10093 | R | Read Defined Variable [NI] Dev2/85 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10094 | R | Check that the Emergency Brake Loop Lamp 44H4 is OFF | EB | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10095 | R | Read Defined Variable [TT] (BCU2)LI_NEB = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10096 | A | Force [TT] (MPU1)lo_ubk_tc2emergbraker1 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10097 | I | Emergency Brake Train Line Dev2/84 = coupler pin 038 Dev2/85 = coupler pin 138 Dev5/61 = END2 90XP15 pin 67 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10098 | R | Read Defined Variable [NI] Dev5/61 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10099 | R | Read Defined Variable [NI] Dev2/84 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10100 | R | Read Defined Variable [NI] Dev2/85 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10101 | R | Check that the Emergency Brake Loop Lamp 44H4 is ON | EB | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10102 | A | Force [TT] (MPU1)lo_ubk_tc2emergbraker2 = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10103 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10104 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10105 | A | Release the Dead Man pushbutton 60S3 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10106 | I | Emergency Brake ERTMS1 Train Line Dev4/88 = END2 90XP14 pin 18 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10107 | A | Force [NI] Dev4/88 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10108 | I | Emergency Brake ERTMS2 Train Line Dev4/80= END2 90XP14 pin 20 | | OK | | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|---|--|----|---|-------------------------|-----|
| 10109 | A | Force [NI] Dev4/80 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10110 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10111 | R | Read Defined Variable [NI] Dev5/61 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10112 | A | Turn the ERTMS Isolation switch 62S1 to "Isolation" position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10113 | A | Turn the Dead Man Override switch 60S1 to "Override" position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10114 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10115 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10116 | I | Emergency Brake Pushbutton | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10117 | A | Push the Emergency Brake Mushroom 44S1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10118 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10119 | R | Read Defined Variable [NI] Dev5/61 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10120 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emgcybrkpbr1 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10121 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emgcybrkpbr2 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10122 | A | Check continuity between 93XT104_5 pin 36 and 93XT103 pin 28 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10123 | A | The points are continuous | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10124 | A | Release the Emergency Brake Mushroom 44S1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10125 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emgcybrkpbr1 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10126 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emgcybrkpbr2 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10127 | A | Force [TT] (MPU1)lo_ubk_tc2emergbraker2 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|--|--|----|---|-------------------------|-----|
| 10128 | A | Return the Dead Man Override switch 60S1 to "Normal" position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10129 | A | Return the ERTMS Isolation switch 62S1 to "Normal" position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10130 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 8 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10131 | A | Force [NI] Dev4/5 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10132 | A | Turn the Emergency Braking Loop Override Switch 44S2 to "Override/Bypass" position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10133 | A | Press and hold the Dead Man pushbutton 60S3 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10134 | I | Emergency Brake Train Line Dev5/61 = END2 90XP15 pin 67 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10135 | R | Read Defined Variable [NI] Dev5/61 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10136 | A | Release the Dead Man pushbutton 60S3 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10137 | A | Return the Emergency Braking Loop Override Switch 44S2 to "Normal" position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10138 | A | Turn Driver's Master Key 30A1.S1 to Non-Active Cabin Position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10139 | I | Emergency Brake Train Line Dev4/61 = END2 90XP15 pin 67 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10140 | A | Force [NI] Dev4/61 = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10141 | A | Measure the voltage on terminal block 93XT104_2 at pin 34, and pin 35 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10142 | R | 110Vdc measured on terminal block 93XT104_2 at pin 34, and pin 35 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10143 | I | Emergency Brake Train Line Dev4/61 = END2 90XP15 pin 67 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10144 | A | Force [NI] Dev4/61 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10145 | I | PEA Loop | | OK | | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|--|---|----|---|-------------------------|-----|
| 10146 | A | Check all the Passenger Emergency Alarm handles, and ensure they are connected to their respective connectors | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10147 | R | All the PEAs are installed and connected | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10148 | A | Open and Close (Reset) Circuit breaker 20Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10149 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 Dev2/59 = coupler pin 117 Dev5/62 = END2 90XP15 pin 95 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10150 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10151 | R | Read Defined Variable [NI] Dev2/59 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10152 | R | Read Defined Variable [NI] Dev5/62 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10153 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10154 | R | Check that the PEA Lamp 44H1 is ON |  | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10155 | I | PEA Loop Train Lines Dev5/62 = END2 90XP15 pin 95 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10156 | R | Read Defined Variable [NI] Dev5/62 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10157 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2pealoop = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10158 | I | PEA Loop OTDR Train Line Dev5/7 = END2 90XP14 pin 10 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10159 | R | Read Defined Variable [NI] Dev5/7 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10160 | I | PEA Loop Train Lines Dev4/62 = END2 90XP15 pin 95 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10161 | A | Force [NI] Dev4/62 = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10162 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10163 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10164 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2pealoop = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|---|---|----|---|----------------------------|-----|
| 10165 | I | PEA Loop OTDR Train Line Dev5/7 = END2 90XP14 pin 10 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10166 | R | Read Defined Variable [NI] Dev5/7 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10167 | R | Check that the PEA Lamp 44H1 is OFF |  | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10168 | I | PEA Reset | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10169 | A | Activate the PEA on door 1 (44S11) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10170 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10171 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10172 | R | Read Defined Variable [TT] (MPU1)Li_UBK_Tc2StateResetPea = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10173 | A | Turn and hold the PEA Reset Switch 44S6 in Reset position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10174 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2restpeaswitch = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10175 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc2resetpea = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10176 | R | Read Defined Variable [TT] (MPU1)Li_UBK_Tc2StateResetPea = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10177 | A | Release the PEA Reset Switch 44S6 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10178 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2restpeaswitch = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10179 | A | Timer 5.0 S | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10180 | R | Read Defined Variable [TT] (MPU1)Li_UBK_Tc2StateResetPea = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10181 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc2resetpea = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10182 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10183 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10184 | A | Activate the PEA on door 2 (44S12) | | OK | | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|---|--|----|---|----------------------------|-----|
| 10185 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10186 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10187 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10188 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10189 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10190 | A | Activate the PEA on door 3 (44S13) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10191 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10192 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10193 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10194 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10195 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10196 | A | Activate the PEA on door 4 (44S14) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10197 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10198 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10199 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10200 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10201 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10202 | A | Activate the PEA on door 5 (44S15) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10203 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10204 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|---|--|----|---|-------------------------|-----|
| 10205 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10206 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10207 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10208 | A | Activate the PEA on door 6 (44S16) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10209 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10210 | R | Read Defined Variable [NI] Dev2/58 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10211 | A | Turn the PEA Reset Switch 44S6 to Reset position, and release it | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10212 | I | PEA Loop Train Lines Dev2/58 = coupler pin 017 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10213 | R | Read Defined Variable [NI] Dev2/58 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10214 | I | PEA Loop Train Lines Dev4/62 = END2 90XP15 pin 95 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10215 | A | Force [NI] Dev4/62 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10216 | I | PEA Override | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10217 | A | Press and hold the Override PEA pushbutton 44S5 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10218 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2peaoverridebuttr1 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10219 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2peaoverridebuttr2 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10220 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc2peaoverrider1 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10221 | R | Read Defined Variable [TT] (MPU1)lo_ubk_tc2peaoverrider2 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10222 | R | Check that the Override PEA pushbutton lamp 44S5 turns ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|---|--|----|---|-------------------------|-----|
| 10223 | A | Release the Override PEA pushbutton 44S5 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10224 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2peaoverridebuttr1 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10225 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2peaoverridebuttr2 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10226 | A | Force [TT] (MPU1)lo_ubk_tc2peaoverrider1 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10227 | A | Force [TT] (MPU1)lo_ubk_tc2peaoverrider2 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10228 | R | Check that the Override PEA pushbutton lamp 44S5 turns OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |



Serial Tests Report
TS221 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

Document Reference
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Emission date
14/05/2024


Section 13 – Service Brake




13.3 Instructions list

13.3.1 040_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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10003 | I | No air supply to the vehicle - pressure in tank <6Bar | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10004 | I | All brake panel cocks are in normal position (not isolated) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10005 | I | The Service Brake Isolation Switch 40S1 should be in Normal position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10006 | I | Circuit Breakers | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10007 | A | Close Circuit Breaker 40Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10008 | A | Close Circuit Breaker 40Q3 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10009 | A | Close Circuit Breaker 40Q4 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10010 | A | Close Circuit Breaker 40Q5 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10011 | I | Brake Air Supply and Brake Application | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10012 | I | EB Reduced Train Lines Dev2/78 = Coupler pin 031 Dev2/81 = Coupler pin 131 Dev5/51 = END2 90XP15 pin 60 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10013 | R | Read Defined Variable [NI] Dev2/78 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10014 | R | Read Defined Variable [NI] Dev2/81 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10015 | R | Read Defined Variable [NI] Dev5/51 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10016 | I | Brake Applied Train Lines Dev2/36 = Coupler pin 010 Dev2/37 = Coupler pin 110 Dev5/49 = END2 90XP15 pin 50 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10017 | R | Read Defined Variable [NI] Dev2/36 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|--|---|----|---|-------------------------|-----|
| 10018 | R | Read Defined Variable [NI] Dev2/37 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10019 | R | Read Defined Variable [NI] Dev5/49 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10020 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2brakeairsuppokr1 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10021 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2brakeairsuppokr2 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10022 | R | Read Defined Variable [TT] (BCU2)LI_BRPS_NOK = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10023 | R | Read Defined Variable [TT] (BCU2)LI_BRAKE_NOT_APPLIED = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10024 | R | The Reduced Brake Lamp 40H2 on the Indicator module 84A1 is ON |  | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10025 | A | Close/Isolate the coupler Isolation cock F2.1/1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10026 | A | Open the Isolation cock F2.2/1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10027 | A | Connect the air supply to the vehicle main pipe coupling flexible hose F3/1, and switch the supply ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10028 | I | Take note of any air leaks in the pipes or valves | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10029 | A | Allow the pressure to go above 6 bar. The pressure can be checked at the BRTP test point | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10030 | R | BRTP pressure is measured >=6 Bar | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10031 | I | EB Reduced Train Lines Dev2/78 = Coupler pin 031 Dev2/81 = Coupler pin 131 Dev5/51 = END2 90XP15 pin 60 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10032 | R | Read Defined Variable [NI] Dev2/78 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10033 | R | Read Defined Variable [NI] Dev2/81 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10034 | R | Read Defined Variable [NI] Dev5/51 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10035 | I | Brake Applied Train Lines Dev2/36 = Coupler pin 010 Dev2/37 = Coupler pin 110 | | OK | | Sqiniseko Xulu - 493646 | TC2 |

| | | | | | | | |
|-------|---|--|---|----|---|-------------------------|-----|
| | | Dev5/49 = END2 90XP15 pin 50 | | | | | |
| 10036 | R | Read Defined Variable [NI] Dev2/36 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10037 | R | Read Defined Variable [NI] Dev2/37 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10038 | R | Read Defined Variable [NI] Dev5/49 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10039 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2brakeairsuppokr1 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10040 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2brakeairsuppokr2 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10041 | R | Read Defined Variable [TT] (BCU2)LI_BRPS_NOK = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10042 | R | Read Defined Variable [TT] (BCU2)LI_BRAKE_NOT_APPLIED = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10043 | R | The Reduced Brake Lamp 40H2 on the Indicator module 84A1 is OFF |  | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10044 | A | Put the Master controller in 100% Traction position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10045 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10046 | A | Force [NI] Dev4/38 = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10047 | R | Lamp 40H1 on the Indicator module 84A1 is ON |  | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10048 | A | Return the Master controller to Normal position (Coasting) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10049 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10050 | A | Force [NI] Dev4/38 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10051 | R | Lamp 40H1 on the Indicator module 84A1 is OFF |  | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10052 | I | Remote Isolation | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10053 | A | Turn the key 30A1.S1 to Non-active cab position | | OK | | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|--|--|----|---|----------------------------|-----|
| 10054 | R | Read Defined Variable [TT] (BCU2)LI_BRAKE_ISO = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10055 | I | Remote Isolation Train Lines Dev4/50 = END2 90XP15 pin 59 Dev2/38 = Coupler pin 025 Dev2/39 = Coupler pin 125 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10056 | A | Force [NI] Dev4/50 = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10057 | R | Read Defined Variable [NI] Dev2/38 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10058 | R | Read Defined Variable [NI] Dev2/39 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10059 | I | Remote Isolation Train Lines Dev4/50 = END2 90XP15 pin 59 Dev2/38 = Coupler pin 025 Dev2/39 = Coupler pin 125 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10060 | A | Force [NI] Dev4/50 = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10061 | R | Read Defined Variable [NI] Dev2/38 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10062 | R | Read Defined Variable [NI] Dev2/39 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10063 | A | Turn the key 30A1.S1 to Active cab position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10064 | A | Turn the Service Brake Isolation Switch 40S2 to Isolation position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2remoteisowitchr1 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2remoteisowitchr2 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10067 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10068 | R | Read Defined Variable [NI] Dev5/51 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10069 | A | Force [TT] (MPU1)lo_sbk_tc2isobrake = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10070 | R | Read Defined Variable [TT] (BCU2)LI_BRAKE_ISO = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10071 | I | Remote Isolation Train Lines Dev2/39 = Coupler pin 125 | | OK | | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|---|--|----|---|-------------------------|-----|
| | | Dev5/50 = END2 90XP15 pin 59 | | | | | |
| 10072 | R | Read Defined Variable [NI] Dev2/39 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10073 | R | Read Defined Variable [NI] Dev5/50 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10075 | A | Release [TT] (MPU1)lo_sbk_tc2isobrake | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10076 | A | Turn the Service Brake Isolation Switch 40S2 to Normal position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10077 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10078 | R | Read Defined Variable [NI] Dev5/51 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10079 | I | Manual Isolation | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10080 | A | Turn the Manual Isolation Cock C1.3.1 to Isolated position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10081 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10082 | R | Read Defined Variable [NI] Dev5/51 = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10083 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2servicebrakedc = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10084 | R | Read Defined Variable [TT] (BCU2)LI_SERVICE_BR_DC = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10085 | A | Turn the Manual Isolation Cock C1.3.1 to Normal position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10086 | I | EB Reduced Train Lines Dev5/51 = END2 90XP15 pin 60 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10087 | R | Read Defined Variable [NI] Dev5/51 = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10088 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2servicebrakedc = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10089 | R | Read Defined Variable [TT] (BCU2)LI_SERVICE_BR_DC = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|--|--|----|---|-------------------------|-----|
| 10090 | I | MCE Fault | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10091 | A | Force [TT] (BCU2)LO_BRK_FLT = 1.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10092 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2bcufault = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10093 | A | Force [TT] (BCU2)LO_BRK_FLT = 0.0 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10094 | R | Read Defined Variable [TT] (MPU1)li_sbk_tc2bcufault = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10095 | A | Release [TT] (BCU2)LO_BRK_FLT | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10096 | I | Speed sensor test for TC2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10097 | A | All connectors from speed sensor (one per axle) is connected to its axle in TC2 car. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10098 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP1Flt = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10099 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP2Flt = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10100 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP3Flt = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10101 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP4Flt = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10102 | A | Remove the connector -41XP1_D2. (axle 1, bogie 1) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10103 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP1Flt = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10104 | A | Remove the connector -41XP2_D2. (axle 2, bogie 1) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10105 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP2Flt = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10106 | A | Remove the connector -41XP3_D2. (axle 1, bogie 2) | | OK | | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|---|--|----|---|----------------------------|-----|
| 10107 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP3Flt = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10108 | A | Remove the connector -41XP4_D2. (axle 2, bogie 2) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10109 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP4Flt = 1.0 | | OK | 1 | Sqiniseko Xulu - 493646 | TC2 |
| 10110 | A | Reconnect all connectors. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10111 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP1Flt = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10112 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP2Flt = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10113 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP3Flt = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |
| 10114 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuSpdSensWSP4Flt = 0.0 | | OK | 0 | Sqiniseko Xulu - 493646 | TC2 |



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TS221 – TC2 – VFT
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Section 14 – Holding and Parking Brake

14.3 Instructions list

14.3.1 045_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 | | Sithembile Xulu - 416253 | TC2 |
| 10002 | I | Initial Conditions | | OK | | Sithembile Xulu - 416253 | TC2 |
| 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 | | Sithembile Xulu - 416253 | TC2 |
| 10004 | I | Confirm the presence of air supply to the vehicle. The pressure can be checked at test point BRTP > 4.8 Bar | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10005 | I | Ensure that the Parking Brake Switch 45S1 is in "Normal" position | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10006 | I | Parking Brake Pressure Switch | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10007 | A | Turn the key 30A1.S1 to Active cab position | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10008 | A | Check that the pressure on test point C1.11/1 is >4.8 Bar | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10009 | R | Read Defined Variable [TT] (BCU2)LI_PARK_BR_RELEASE = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10010 | R | Read Defined Variable [TT] (MPU1)BCU2_ParkBrakeRelease = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10011 | R | Read Defined Variable [TT] (BCU2)LI_PARK_BR_DC = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10012 | R | Read Defined Variable [TT] (MPU1)BCU2_ParkBrakeSolDC = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10013 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10014 | R | Read Defined Variable [NI] Dev2/74 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |

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|-------|---|--|---|----|---|--------------------------|-----|
| 10015 | R | Read Defined Variable [NI] Dev2/49 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10016 | R | Read Defined Variable [NI] Dev5/58 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10017 | R | Check that the Parking Brake Applied Lamp 45H2 on the indicator module 84A1 is OFF |  | OK | | Sithembile Xulu - 416253 | TC2 |
| 10018 | I | Remote Parking Brake Command | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10019 | A | Turn the Parking Brake Switch 45S1 to "Parking Brake" position | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10020 | R | Confirm that the parking brake is applied, and air is released from electro valve C1.5 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 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 | | Sithembile Xulu - 416253 | TC2 |
| 10022 | R | Read Defined Variable [NI] Dev2/86 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10023 | R | Read Defined Variable [NI] Dev2/87 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10024 | R | Read Defined Variable [NI] Dev5/57 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10025 | A | Allow the air to reach below 4.8 Bar - verify on test point C1.11/1 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10026 | R | Read Defined Variable [TT] (BCU2)LI_PARK_BR_RELEASE = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10027 | R | Read Defined Variable [TT] (MPU1)BCU2_ParkBrakeRelease = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10028 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10029 | R | Read Defined Variable [NI] Dev2/74 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10030 | R | Read Defined Variable [NI] Dev2/49 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10031 | R | Read Defined Variable [NI] Dev5/58 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10032 | R | Check that the Parking Brake Applied Lamp 45H2 on the indicator module 84A1 turns ON |  | OK | | Sithembile Xulu - 416253 | TC2 |

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|-------|---|--|--|----|---|--------------------------|-----|
| 10033 | A | Turn the Parking Brake Switch 45S1 to "Normal" position | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10034 | I | Remote Parking Brake Command Train lines Dev2/86 = Coupler pin 030 Dev2/87 = Coupler pin 130 Dev5/57 = END2 90XP15 pin 68 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10035 | R | Read Defined Variable [NI] Dev2/86 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10036 | R | Read Defined Variable [NI] Dev2/87 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10037 | R | Read Defined Variable [NI] Dev5/57 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10038 | I | Parking Brake Manual Isolation | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10039 | A | Turn the Parking Brake Isolation cock C1.3.2 to "Isolated" position | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10040 | R | Read Defined Variable [TT] (BCU2)LI_PARK_BR_DC = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10041 | R | Read Defined Variable [TT] (MPU1)BCU2_ParkBrakeIsolDC = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10042 | R | Read Defined Variable [TT] (MPU1)li_pbk_tc2parkbrakeisol = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |
| 10043 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 Dev2/49 = Coupler pin 118 Dev5/58 = END2 90XP15 pin 77 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10044 | R | Read Defined Variable [NI] Dev2/74 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10045 | R | Read Defined Variable [NI] Dev2/49 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10046 | R | Read Defined Variable [NI] Dev5/58 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10047 | A | Return the Parking Brake Isolation cock C1.3.2 to "Normal" position | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10048 | R | Read Defined Variable [TT] (BCU2)LI_PARK_BR_DC = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10049 | R | Read Defined Variable [TT] (MPU1)BCU2_ParkBrakeIsolDC = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10050 | R | Read Defined Variable [TT] (MPU1)li_pbk_tc2parkbrakeisol = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |

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|-------|---|--|--|----|---|-----------------------------|-----|
| 10051 | I | Parking Brake Applied Train Lines Dev2/74 = Coupler pin 018 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10052 | R | Read Defined Variable [NI] Dev2/74 = 1.0 | | OK | 1 | Sithembile Xulu - 416253 | TC2 |



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Section 15 – Passenger Doors


15.3 Instructions list

15.3.1 050_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 | | Thandanani Makhanya - 463827 | TC2 |
| 10002 | I | Initial Conditions: | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10003 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10004 | I | Car Should be Prepared (closed battery contacts) | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10005 | I | Cab door windows should be closed | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10006 | I | Cab doors should be closed and unlocked | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10007 | I | Cab Door Windows | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10008 | A | Open and close both the LEFT and RIGHT cab door windows | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10009 | R | The LEFT cab door window opens and closes correctly | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10010 | R | The RIGHT cab door window opens and closes correctly | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10011 | I | Cabin Doors | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10012 | A | Open all 3 cab doors (LEFT, RIGHT, and saloon access) and close them | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10013 | R | The LEFT cab door can open fully and close shut | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10014 | R | The RIGHT cab door can open fully and close shut | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10015 | R | The saloon access door can open fully and close shut | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10016 | A | Lock the 3 doors | | OK | | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|--|--|----|--|---------------------------------|-----|
| 10017 | R | The LEFT cab door lock is functioning correctly and the door cannot be opened | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10018 | R | The RIGHT cab door lock is functioning correctly and the door cannot be opened | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10019 | R | The Saloon access door lock is functioning correctly and the door cannot be opened | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10020 | A | Unlock the doors | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10021 | A | Repeat the open, close and lock operations from the outside of the vehicle | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10022 | R | Both cab doors can be opened, closed and locked from the outside | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10023 | I | External access locks | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10024 | I | Ensure Door 1 and Door 2 are closed | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10025 | A | Insert a square key into the external access lock of Door 1, and unlock the door | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10026 | R | The door is unlocked and can be opened freely | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10027 | A | Close the door, and lock the external access lock with the square key | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10028 | R | The door is locked and can no longer be opened manually | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10029 | A | Insert a square key into the external access lock of Door 2, and unlock the door | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10030 | R | The door is unlocked and can be opened freely | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10031 | A | Close the door, and lock the external access lock with the square key | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10032 | R | The door is locked and can no longer be opened manually | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10033 | I | Circuit Breakers | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10034 | A | Close Circuit Breaker 50Q1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10035 | R | DCU 1 is powered ON | | OK | | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|--|---|----|--|---------------------------------|-----|
| 10036 | R | Check on the DDU that DCU1 is online | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10037 | A | Close Circuit Breaker 50Q2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10038 | R | DCU 2 is powered ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10039 | R | Check on the DDU that DCU2 is online | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10040 | A | Close Circuit Breaker 50Q3 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10041 | R | DCU 3 is powered ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10042 | R | Check on the DDU that DCU3 is online | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10043 | A | Close Circuit Breaker 50Q4 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10044 | R | DCU 4 is powered ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10045 | R | Check on the DDU that DCU4 is online | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10046 | A | Close Circuit Breaker 50Q5 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10047 | R | DCU 5 is powered ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10048 | R | Check on the DDU that DCU5 is online | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10049 | A | Close Circuit Breaker 50Q6 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10050 | R | DCU 6 is powered ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10051 | R | Check on the DDU that DCU6 is online | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10052 | A | Close Circuit Breaker 50Q7 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10053 | I | Car ID Code | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10054 | A | Using the Door Status screen on the DDU, check that all the doors on TC2 are available - as in the picture below |  | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10055 | R | All doors are available | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10056 | I | Left Side Doors | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10057 | I | Door Authorization | | OK | | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|--|--|----|---|---------------------------------|-----|
| 10058 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10059 | A | Force [NI] Dev4/39 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10060 | A | Switch Door Authorization Selector 50S7 to DRIVER | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10061 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2ertmsauthdoor1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10062 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2ertmsauthdoor2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10063 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2authdoorpbleft = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10064 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdlefr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdlefr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10066 | I | Door Auth Left Train Lines Dev2/56 = Coupler pin 009 Dev2/57 = Coupler pin 124 Dev5/64 = END2 90XP15 pin 85 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10067 | R | Read Defined Variable [NI] Dev2/56 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10068 | R | Read Defined Variable [NI] Dev2/57 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10069 | R | Read Defined Variable [NI] Dev5/64 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10070 | A | Press the Doors LEFT Side Authorization button 50S5 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10071 | R | Check that the YELLOW LEFT Side Authorization pushbutton lamp 50S5 turns ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10072 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2authdoorpbleft = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10073 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdlefr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10074 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdlefr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10075 | I | Door Auth Left Train Lines Dev2/56 = Coupler pin 009 | | OK | | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|---|--|----|---|---------------------------------|-----|
| | | Dev2/57 = Coupler pin 124 Dev5/64 = END2 90XP15 pin 85 | | | | | |
| 10076 | R | Read Defined Variable [NI] Dev2/56 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10077 | R | Read Defined Variable [NI] Dev2/57 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10078 | R | Read Defined Variable [NI] Dev5/64 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10079 | A | Turn Driver's Master Key 30A1.S1 to NON-Active Cabin Position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10080 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdlefr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10081 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10082 | I | Door Open | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10083 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorplefr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10084 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorplefr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10085 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgtlefr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10086 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgtlefr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10087 | A | Press the LEFT side Door Open pushbutton 50S1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10088 | R | Check that the WHITE LEFT Side Door Open pushbutton lamp 50S1 turns ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10089 | R | Check that doors 1, 3 and 5 (LEFT SIDE) open | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10090 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorleft = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10091 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorplefr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10092 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorplefr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|---|--|----|---|---------------------------------|-----|
| 10093 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgtleftr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10094 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgtleftr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10095 | I | Door Closing | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10096 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbleftr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10097 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbleftr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10098 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgtleftr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10099 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgtleftr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10100 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorlineleft = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10101 | I | Door Close Left Train Lines Dev2/50 = Coupler pin 004 Dev2/51 = Coupler pin 137 Dev5/60 = END2 90XP15 pin 79 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10102 | R | Read Defined Variable [NI] Dev2/50 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10103 | R | Read Defined Variable [NI] Dev2/51 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10104 | R | Read Defined Variable [NI] Dev5/60 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10105 | A | Press the LEFT side Door Close pushbutton 50S3 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10106 | R | Check that the BLUE LEFT Side Door Close pushbutton lamp 50S3 turns ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10107 | R | Check that doors 1, 3 and 5 (LEFT SIDE) close | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10108 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbleftr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10109 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbleftr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|---|--|----|---|---------------------------------|-----|
| 10110 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgleftr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10111 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgleftr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10112 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorlineleft = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10113 | I | Door Close Left Train Lines Dev2/50 = Coupler pin 004 Dev2/51 = Coupler pin 137 Dev5/60 = END2 90XP15 pin 79 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10114 | R | Read Defined Variable [NI] Dev2/50 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10115 | R | Read Defined Variable [NI] Dev2/51 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10116 | R | Read Defined Variable [NI] Dev5/60 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10117 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdlefr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10118 | I | Right Side Doors | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10119 | I | Door Authorization | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10120 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2authdoorpbright = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10121 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdightr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10122 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdightr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10123 | I | Door Auth Right Train Lines Dev2/54 = Coupler pin 024 Dev2/64 = Coupler pin 109 Dev5/56 = END2 90XP15 pin 84 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10124 | R | Read Defined Variable [NI] Dev2/54 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10125 | R | Read Defined Variable [NI] Dev2/64 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10126 | R | Read Defined Variable [NI] Dev5/56 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10127 | A | Press the Doors RIGHT Side Authorization button 50S6 | | OK | | Thandanani Makhanya - 463827 | TC2 |

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| 10128 | R | Check that the YELLOW RIGHT Side Authorization pushbutton lamp 50S6 turns ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10129 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2authdoorpbright = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10130 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdrightr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10131 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdrightr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10132 | I | Door Auth Right Train Lines Dev2/54 = Coupler pin 024 Dev2/64 = Coupler pin 109 Dev5/56 = END2 90XP15 pin 84 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10133 | R | Read Defined Variable [NI] Dev2/54 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10134 | R | Read Defined Variable [NI] Dev2/64 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10135 | R | Read Defined Variable [NI] Dev5/56 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10136 | A | Turn Driver's Master Key 30A1.S1 to NON-Active Cabin Position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10137 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdrightr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10138 | A | Turn Driver's Master Key 30A1.S1 to Active Cabin Position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10139 | I | Door Open | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10140 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorpbright1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10141 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorpbright2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10142 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgrightr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10143 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgrightr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |


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|-------|---|--|--|----|---|---------------------------------|-----|
| 10144 | A | Press the RIGHT side Door Open pushbutton 50S2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10145 | R | Check that the WHITE RIGHT Side Door Open pushbutton lamp 50S2 turns ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10146 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) open | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10147 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorright = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10148 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorpbright1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10149 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2opendoorpbright2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10150 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgrightr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10151 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2opendoorlgrightr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10152 | I | Door Closing | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10153 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbright1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10154 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbright2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10155 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgrightr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10156 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgrightr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10157 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorlineright = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10158 | I | Door Close Right Train Lines Dev2/52 = Coupler pin 037 Dev2/53 = Coupler pin 104 | | OK | | Thandanani Makhanya - 463827 | TC2 |


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|-------|---|--|--|----|---|---------------------------------|-----|
| | | Dev5/59 = END2 90XP15 pin 78 | | | | | |
| 10159 | R | Read Defined Variable [NI] Dev2/52 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10160 | R | Read Defined Variable [NI] Dev2/53 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10161 | R | Read Defined Variable [NI] Dev5/59 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10162 | A | Press the RIGHT side Door Close pushbutton 50S4 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10163 | R | Check that the BLUE RIGHT Side Door Close pushbutton lamp 50S4 turns ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10164 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) close | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10165 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbright1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10166 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorpbright2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10167 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgrightr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10168 | R | Read Defined Variable [TT] (MPU1)lo_dor_tc2closedoorlgrightr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10169 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2closedoorlinerright = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10170 | I | Door Close Right Train Lines Dev2/52 = Coupler pin 037 Dev2/53 = Coupler pin 104 Dev5/59 = END2 90XP15 pin 78 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10171 | R | Read Defined Variable [NI] Dev2/52 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10172 | R | Read Defined Variable [NI] Dev2/53 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10173 | R | Read Defined Variable [NI] Dev5/59 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10174 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2doorauthdrightr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|--|--|----|---|---------------------------------|-----|
| 10175 | I | Closing Conditions | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10176 | A | Press the Doors LEFT Side Authorization button 50S5 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10177 | I | Door Close Left Train Line Dev5/60 = END2 90XP15 pin 79 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10178 | R | Read Defined Variable [NI] Dev5/60 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10179 | A | Press the Doors RIGHT Side Authorization button 50S4 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10180 | I | Door Close Right Train Lines Dev5/59 = END2 90XP15 pin 78 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10181 | R | Read Defined Variable [NI] Dev5/59 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10182 | A | Press the LEFT side Door Open pushbutton 50S1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10183 | A | Press the RIGHT side Door Open pushbutton 50S2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10184 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10185 | A | Force [NI] Dev4/38 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10186 | R | Read Defined Variable [TT] (MPU1)li_rec_tc2thresholdfive1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10187 | R | Read Defined Variable [TT] (MPU1)li_rec_tc2thresholdfive2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10188 | I | Door Close Right Train Lines Dev5/59 = END2 90XP15 pin 78 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10189 | R | Read Defined Variable [NI] Dev5/59 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10190 | I | Door Close Left Train Line Dev5/60 = END2 90XP15 pin 79 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10191 | R | Read Defined Variable [NI] Dev5/60 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10192 | R | Check that all the Doors Close | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10193 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Thandanani Makhanya - 463827 | TC2 |

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| 10194 | A | Force [NI] Dev4/38 = 0.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10195 | R | Read Defined Variable [TT] (MPU1)li_rec_tc2thresholdfive1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10196 | R | Read Defined Variable [TT] (MPU1)li_rec_tc2thresholdfive2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10197 | I | ERTMS Control | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10198 | A | Switch Door Authorization Selector 50S7 to ERTMS | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10199 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2ertmsauthdoor1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10200 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2ertmsauthdoor2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10201 | I | Left Doors | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10202 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10203 | A | Force [NI] Dev4/86 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10204 | R | Check that the YELLOW LEFT Side Authorization pushbutton lamp 50S5 turns ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10205 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthlefr1 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10206 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthlefr2 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10207 | A | Force [TT] (MPU1)lo_dor_tc2opendoorleft = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10208 | R | Check that doors 1, 3 and 5 (LEFT SIDE) open | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10209 | A | Release [TT] (MPU1)lo_dor_tc2opendoorleft | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10210 | R | Check that doors 1, 3 and 5 (LEFT SIDE) close | | OK | | Thandanani Makhanya - 463827 | TC2 |

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| 10211 | A | Press the LEFT side Door Open pushbutton 50S1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10212 | R | Check that doors 1, 3 and 5 (LEFT SIDE) open | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10213 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10214 | A | Force [NI] Dev4/86 = 0.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10215 | A | Press the LEFT side Door Close pushbutton 50S3 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10216 | R | Check that doors 1, 3 and 5 (LEFT SIDE) close | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10217 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10218 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10219 | I | Right Doors | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10220 | I | ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10221 | A | Force [NI] Dev4/87 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10222 | R | Check that the YELLOW RIGHT Side Authorization pushbutton lamp 50S6 turns ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10223 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthrightr1 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10224 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthrightr2 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10225 | A | Force [TT] (MPU1)lo_dor_tc2opendoorright = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10226 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) open | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10227 | A | Release [TT] (MPU1)lo_dor_tc2opendoorright | | OK | | Thandanani Makhanya - 463827 | TC2 |

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| 10228 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) close | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10229 | A | Press the RIGHT side Door Open pushbutton 50S2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10230 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) open | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10231 | I | ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10232 | A | Force [NI] Dev4/87 = 0.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10233 | R | Check that doors 2, 4 and 6 (RIGHT SIDE) close | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10234 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthrightr1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10235 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthrightr2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10236 | I | Opening Gap, Safety Loop and Obstacle Detection | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10237 | A | Close Circuit Breaker 51Q1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10238 | A | Check that the Door Safety Loop Indicator lamp 51H1 is ON |  | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10239 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2alldoorsclosedr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10240 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2alldoorsclosedr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10241 | I | Safety Doors Loop Train Line Dev2/60 = Coupler pin 016 Dev2/61 = Coupler pin 116 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10242 | R | Read Defined Variable [NI] Dev2/60 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10243 | R | Read Defined Variable [NI] Dev2/61 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10244 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 Dev2/83 = Coupler pin 129 Dev5/55 = END2 90XP15 pin 66 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10245 | R | Read Defined Variable [NI] Dev2/82 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |

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| 10246 | R | Read Defined Variable [NI] Dev2/83 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10247 | R | Read Defined Variable [NI] Dev5/55 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10248 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP25 pin 96 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10249 | A | Force [NI] Dev4/89 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10250 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2alldoorsclosedr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10251 | R | Read Defined Variable [TT] (MPU1)li_dor_tc2alldoorsclosedr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10252 | I | Safety Doors Loop Train Line Dev2/60 = Coupler pin 016 Dev2/61 = Coupler pin 116 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10253 | R | Read Defined Variable [NI] Dev2/60 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10254 | R | Read Defined Variable [NI] Dev2/61 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10255 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 Dev2/83 = Coupler pin 129 Dev5/55 = END2 90XP15 pin 66 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10256 | R | Read Defined Variable [NI] Dev2/82 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10257 | R | Read Defined Variable [NI] Dev2/83 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10258 | R | Read Defined Variable [NI] Dev5/55 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10259 | A | Check that the Door Safety Loop Indicator lamp 51H1 is OFF  | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10260 | I | Door 1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10261 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10262 | A | Force [NI] Dev4/86 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10263 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthlefr1 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10264 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthlefr2 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |

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| 10265 | A | Force [TT] (MPU1)lo_dor_tc2opendoorleft = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10266 | R | Check that the door opens in 3 sec (+1/-0) | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10267 | R | Check that the GREEN leds on both sides of the door blink while the door opens [Safety Request: Prasa8-05] | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10268 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10269 | R | Read Defined Variable [NI] Dev2/82 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10270 | I | Door Opening Gap | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10271 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10272 | R | Door 1 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1394 | Thandanani Makhanya - 463827 | TC2 |
| 10273 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10274 | R | Door 1 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1402 | Thandanani Makhanya - 463827 | TC2 |
| 10275 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10276 | R | Door 1 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1398 | Thandanani Makhanya - 463827 | TC2 |
| 10277 | I | Door 3 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10278 | I | Door Opening Gap | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10279 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10280 | R | Door 3 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1395 | Thandanani Makhanya - 463827 | TC2 |
| 10281 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |

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| 10282 | R | Door 3 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1403 | Thandanani Makhanya - 463827 | TC2 |
| 10283 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10284 | R | Door 3 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1399 | Thandanani Makhanya - 463827 | TC2 |
| 10285 | I | Door 5 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10286 | I | Door Opening Gap | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10287 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10288 | R | Door 5 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1395 | Thandanani Makhanya - 463827 | TC2 |
| 10289 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10290 | R | Door 5 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1402 | Thandanani Makhanya - 463827 | TC2 |
| 10291 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10292 | R | Door 5 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1398 | Thandanani Makhanya - 463827 | TC2 |
| 10293 | A | Release [TT] (MPU1)lo_dor_tc2opendoorleft | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10294 | R | Check if ALL left doors closes in 3 sec (+1/-0) | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10295 | R | Check that the RED leds on both sides of the door blink while the door closes [Safety Request: Prasa8-05] | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10296 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10297 | R | Read Undefined Variable [NI] Dev2/82 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |

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| 10298 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10299 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10300 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10301 | A | Force [NI] Dev4/86 = | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10302 | I | Door 2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10303 | I | ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10304 | A | Force [NI] Dev4/87 = | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10305 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthrightr1 = | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10306 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthrightr2 = | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10307 | A | Force [TT] (MPU1)lo_dor_tc2opendoorright = | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10308 | R | Check that the door opens in 3 sec (+1/-0) | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10309 | R | Check that the GREEN leds on both sides of the door blink while the door opens [Safety Request: Prasa8-05] | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10310 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10311 | R | Read Undefined Variable [NI] Dev2/82 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10312 | I | Door Opening Gap | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10313 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10314 | R | Door 2 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1396 | Thandanani Makhanya - 463827 | TC2 |
| 10315 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |

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| 10316 | R | Door 2 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1402 | Thandanani Makhanya - 463827 | TC2 |
| 10317 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10318 | R | Door 2 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1399 | Thandanani Makhanya - 463827 | TC2 |
| 10319 | I | Door 4 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10320 | I | Door Opening Gap | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10321 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10322 | R | Door 4 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1398 | Sizwe Sibanyoni - 484647 | TC2 |
| 10323 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10324 | R | Door 4 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1410 | Sizwe Sibanyoni - 484647 | TC2 |
| 10325 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Sizwe Sibanyoni - 484647 | TC2 |
| 10326 | R | Door 4 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1400 | Sizwe Sibanyoni - 484647 | TC2 |
| 10327 | I | Door 6 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10328 | I | Door Opening Gap | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10329 | A | Measure the opening gap of the door. (The measurement must be done at the BOTTOM of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10330 | R | Door 6 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1395 | Thandanani Makhanya - 463827 | TC2 |
| 10331 | A | Measure the opening gap of the door. (The measurement must be done at the TOP of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |

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| 10332 | R | Door 6 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1403 | Thandanani Makhanya - 463827 | TC2 |
| 10333 | A | Measure the opening gap of the door. (The measurement must be done in the MIDDLE of the door). | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10334 | R | Door 6 gap Result Min/Max : 1390<= x <= 1410 (mm) | | OK | 1399 | Thandanani Makhanya - 463827 | TC2 |
| 10335 | I | Obstacle Detection | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10336 | I | ERTMS Auth Left Train Line Dev4/86 = END2 90XP15 pin 44 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10337 | A | Force [NI] Dev4/86 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10338 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthleftr1 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10339 | A | Force [TT] (MPU1)lo_dor_tc2distertmsauthleftr2 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10340 | A | Position an obstacle on the floor in the centre of each and every door closing line | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10341 | A | Release [TT] (MPU1)lo_dor_tc2opendoorright | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10342 | A | Release [TT] (MPU1)lo_dor_tc2opendoorleft | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10343 | 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 | | Thandanani Makhanya - 463827 | TC2 |
| 10344 | A | Force [TT] (MPU1)lo_dor_tc2opendoorright = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10345 | A | Force [TT] (MPU1)lo_dor_tc2opendoorleft = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10346 | A | Remove the obstacles | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10347 | A | Release [TT] (MPU1)lo_dor_tc2opendoorright | | OK | | Thandanani Makhanya - 463827 | TC2 |

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| 10348 | A | Release [TT] (MPU1)lo_dor_tc2opendoorleft | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10349 | R | Check if ALL doors closes in 3 sec (+1/-0) | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10350 | R | Check that the RED leds on both sides of the door blink while the door closes [Safety Request: Prasa8-05] | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10351 | I | Doors Open Train Line Dev2/82 = Coupler pin 029 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10352 | R | Read Defined Variable [NI] Dev2/82 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10353 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthrightr1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10354 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthrightr2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10355 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10356 | A | Release [TT] (MPU1)lo_dor_tc2distertmsauthlefr2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10357 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP25 pin 96 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10358 | A | Force [NI] Dev4/89 = 0.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10359 | I | ERTMS Auth Right Train Line Dev4/87 = END2 90XP15 pin 47 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10360 | A | Force [NI] Dev4/87 = 0.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10361 | I | V<3km/h Train Line Dev4/39 = END2 90XP15 pin 29 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10362 | A | Force [NI] Dev4/39 = 0.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10363 | A | Switch Door Authorization Selector 50S7 to DRIVER | | OK | | Thandanani Makhanya - 463827 | TC2 |



Serial Tests Report
TS221 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

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Version: A0

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Section 16 – HVAC Air Conditioning


16.3 Instructions list



16.3.1 057_HVA-HVAC Air Conditioning

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


| N° | Type | Instruction | File | Result status | Result value | Operator | Vehicle |
|-------|------|--|------|---------------|--------------|--------------------------|---------|
| 10001 | I | Initial conditions | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10002 | A | Car Should be Prepared | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10003 | I | Power Supply | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10004 | A | Remove Connector 57XP1_5 from HVAC Panel | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10005 | A | Close Circuit Breaker 57Q2 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10006 | A | Force [TT] (MPU1)lo_hva_tc2hvacinhibr1__1 = 0.0 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10007 | A | Force [TT] (MPU1)lo_hva_tc2hvacinhibr2__1 = 0.0 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10008 | R | Check battery voltage (above 80Vdc) between points 11 and 9 of the connector 57XP1_5 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10009 | A | Force [TT] (MPU1)lo_hva_tc2hvacinhibr2__1 = 1.0 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10010 | R | Check 0Vdc between points 11 and 9 of the connector 57XP1_5 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10011 | A | Force [TT] (MPU1)lo_hva_tc2hvacinhibr1__1 = 1.0 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10012 | R | Check 0Vdc between points 11 and 9 of the connector 57XP1_5 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10013 | R | Check 0Vdc between points 10 and 9 of the connector 57XP1_5 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10014 | A | Force [TT] (MPU1)lo_hva_tc2hvacinhibr2__1 = 0.0 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10015 | A | Force [TT] (MPU1)lo_hva_tc2emergventil__1 = 1.0 | | OK | | Sithembile Xulu - 416253 | TC2 |


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|-------|---|---|---|----|--|--------------------------|-----|
| 10016 | R | Check 0Vdc between points 11 and 9 of the connector 57XP1_5 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10017 | R | Check battery voltage (above 80Vdc) between points 10 and 9 of the connector 57XP1_5 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10018 | A | Release [TT] (MPU1)lo_hva_tc2emergventil__1 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10019 | A | Release [TT] (MPU1)lo_hva_tc2hvacinhibr1__1 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10020 | A | Release [TT] (MPU1)lo_hva_tc2hvacinhibr2__1 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10021 | A | Put Back the Connector 57XP1_5 from HVAC Panel | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10022 | I | HVAC Electronic Power Supply | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10023 | A | Close Circuit Breaker F1 on the HVAC Panel | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10024 | A | Turn the control switch to AUTO position on the HVAC Panel | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10025 | R | The HVAC electronic is ON | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10026 | A | Open Circuit Breaker F1 on the HVAC Panel | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10027 | R | The HVAC electronic is OFF | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10028 | A | Close Circuit Breaker F1 on the HVAC Panel | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10029 | I | Software Upload |  | OK | | Sithembile Xulu - 416253 | TC2 |
| 10030 | I | Follow the procedure in the document below to upload software onto the HVAC electronic |  | OK | | Sithembile Xulu - 416253 | TC2 |
| 10031 | I | Sensor's Grade | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10032 | I | Each temperature sensor has calibrated grade information. The sensor must be setup with this information. | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10033 | A | The label with sensor grade information is found inside the HVAC frame, near the | | OK | | Sithembile Xulu - 416253 | TC2 |

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|-------|---|---|---|----|----|--------------------------|-----|
| | | filter. Inside the train, open the ceiling filter access, rotate a damper and read the label. | | | | | |
| 10034 | R | Sensor grade for HVAC Return Air (RAS) is: | | OK | 3H | Sithembile Xulu - 416253 | TC2 |
| 10035 | R | Sensor grade for HVAC Duct Air (DAS) is: | | OK | 7 | Sithembile Xulu - 416253 | TC2 |
| 10036 | R | Sensor grade for HVAC Fresh Air (FAS) is: | | OK | 8L | Sithembile Xulu - 416253 | TC2 |
| 10037 | R | Sensor grade for HVAC Duct Air 2 (DAS2) is: | | OK | 4 | Sithembile Xulu - 416253 | TC2 |
| 10038 | A | In the maintenance software, select the "Application settings" page and click the "Sensors" tab | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10039 | A | Enter the data found on the label for each grade. Then, click "Save settings" |  | OK | | Sithembile Xulu - 416253 | TC2 |
| 10040 | A | Open Circuit Breaker F1 on the HVAC Panel | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10041 | I | Checking 400Vac | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10042 | A | Ensure that the 400Vac Shore Supply is connected to the vehicle, else connect it | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10043 | A | Close Circuit Breaker 57Q1 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10044 | A | Measure 400Vac in the Terminal Block next to the connector '57XP1_10. A / '57XP1_10. B' on the HVAC Panel | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10045 | R | 400Vac measured | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10046 | A | On the HVAC Panel check 400Vac between points L1- Phase R, L2- Phase S, L3- Phase T | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10047 | R | 400Vac is measured between each of the phases | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10048 | A | On the HVAC Panel, with a phasemeter, check the correct Phase Rotation between points L1- Phase R, L2- Phase S and L3- Phase T. | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10049 | R | The phase rotation is correct between all three phases | | OK | | Sithembile Xulu - 416253 | TC2 |

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|-------|---|---|---|----|--|--------------------------|-----|
| 10050 | I | Using the tools list on the side of your screen, log the details of the phasemeter used | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10051 | I | Saloon HVAC | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10052 | A | Close Circuit Breaker F1 on the HVAC Panel | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10053 | R | HVAC unit turns ON and starts to work | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10054 | I | Reconnect the laptop to the HVAC maintenance software using HCU Finder | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10055 | R | The Exhaust fans are Turned Off (Confirm on Forced tab that Actual exhauster speed is OFF) |  | OK | | Sithembile Xulu - 416253 | TC2 |
| 10056 | I | Forced Mode (Saloon HVAC) | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10057 | I | For the next sections, walk through the whole car and physically check (feel) that the HVAC is functioning as desired |  | OK | | Sithembile Xulu - 416253 | TC2 |
| 10058 | I | In the maintenance software, select the 'Forced' tab, and use the "Required working mode" drop down box to force the following modes: | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10059 | I | Ventilation Mode | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10060 | A | Force Ventilation mode on the Saloon HVAC | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10061 | R | All saloon HVAC units work in Ventilation mode. Not heating/cooling | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10062 | R | The Exhaust fans are Turned OFF | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10063 | I | Cooling Mode | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10064 | A | Force Cooling mode on the Saloon HVAC | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10065 | R | All saloon HVAC units work in Cooling mode | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10066 | R | The Exhaust fans are Turned OFF | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10067 | I | Heating Mode | | OK | | Sithembile Xulu - 416253 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|---|--------------------------|-----|
| 10068 | A | Force Heating mode on the Saloon HVAC | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10069 | R | All saloon HVAC units work in Heating mode | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10070 | R | The Exhaust fans are Turned OFF | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10071 | I | Automatic Mode | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10072 | A | Force Self-Test on the Saloon HVAC | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10073 | R | All saloon HVAC units work according to the mode described in the "Actual working mode" | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10074 | R | The Exhaust fans are Turned OFF | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10075 | I | Cabin Footrest Heater Test | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10076 | I | Use the tools list on the side of your screen, to record the serial number of the Infrared Thermometer that will be used in the next section | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10077 | A | Close Circuit Breaker 57Q3 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10078 | R | The Foot Heater pushbutton white lamp 57S3 is OFF | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10079 | R | Foot Heater is Off (UDM) | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10080 | A | Press the Foot Heater Pushbutton 57S3 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10081 | R | The Foot Heater pushbutton white lamp 57S3 is ON | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10082 | R | Read Defined Variable [TT] (MPU1)li_hva_tc2footheaterfault__1 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10083 | R | Foot Heater is ON (allow some time for it to heat up and confirm with the Infrared Thermometer that it is heating up) | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10084 | A | Once verified working, press the Foot Heater Pushbutton 57S3 | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10085 | R | The Foot Heater pushbutton white lamp 57S3 is OFF | | OK | | Sithembile Xulu - 416253 | TC2 |

| | | | | | | | |
|-------|---|--|---|----|---|-----------------------------|-----|
| 10086 | R | Read Defined Variable [TT] (MPU1)li_hva_tc2footheaterfault__1 = 0.0 | | OK | 0 | Sithembile Xulu - 416253 | TC2 |
| 10087 | R | Foot Heater is OFF (allow some time for it to cool down and confirm with the Infrared Thermometer that it is cooling down) | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10088 | A | Check that the Footrest can go up by slightly pressing the adjusting pedal | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10089 | R | The Footrest is adjustable, it can go up. | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10090 | A | Check that the Footrest can go down by pressing the adjusting pedal. Ensure the other foot applies force on the Footrest | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10091 | R | The Footrest is adjustable, it can go down. | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10092 | I | Forced Mode (Cabin HVAC) |  | OK | | Sithembile Xulu - 416253 | TC2 |
| 10093 | I | In the maintenance software, select the 'Forced' tab, and use the "Required working mode" drop down box to force the following modes: | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10094 | I | Ventilation Mode | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10095 | A | Force Ventilation mode on the Cab HVAC | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10096 | R | The Cab HVAC works in Ventilation mode. Not heating/cooling | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10097 | I | Cooling Mode | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10098 | A | Force Cooling mode on the Cab HVAC | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10099 | R | The Cab HVAC works in Cooling mode | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10100 | I | Heating Mode | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10101 | A | Force Heating mode on the Cab HVAC | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10102 | R | The Cab HVAC works in Heating mode | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10103 | I | Automatic Mode | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10104 | A | Force Automatic mode on the Cab HVAC | | OK | | Sithembile Xulu - 416253 | TC2 |

| | | | | | | | |
|-------|---|--|---|----|-----|--------------------------|-----|
| 10105 | R | The Cab HVAC works in Automatic mode - according to the mode described in the "Actual working mode" | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10106 | I | HVAC Faults | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10107 | A | In the maintenance software, select the "Alarms / Warnings" tab |  | OK | | Sithembile Xulu - 416253 | TC2 |
| 10108 | A | Ensure there are no active faults on the HVAC | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10109 | R | No active faults identified on the HVAC unit | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10110 | I | Air Flow Measure | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10111 | I | Using the tools list on the side of your screen, log the details of the anemometer used | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10112 | A | Check that the windshield air outlet is open | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10113 | A | On the left side diffuser, put an anemometer in the middle of the air diffuser directly in contact with the grill | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10114 | A | Record the average air speed over 30 s | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10115 | R | Average air speed | | OK | 3.7 | Sithembile Xulu - 416253 | TC2 |
| 10116 | A | On the right-side diffuser, put the anemometer in the middle of air diffuser directly in contact with the grill | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10117 | A | Record the average air speed over 30s | | OK | | Sithembile Xulu - 416253 | TC2 |
| 10118 | R | Average air speed | | OK | 3.5 | Sithembile Xulu - 416253 | TC2 |
| 10119 | 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 | | Sithembile Xulu - 416253 | TC2 |
| 10120 | R | Difference between left-right air flow is within 15% | | OK | | Sithembile Xulu - 416253 | TC2 |



| | | | | | | | |
|-------|---|-----------------------|--|----|--|-----------------------------|-----|
| 10121 | R | Cabin HVAC turned OFF | | OK | | Sithembile Xulu - 416253 | TC2 |
|-------|---|-----------------------|--|----|--|-----------------------------|-----|



Serial Tests Report
TS221 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

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Section 17 – Fire Protection

17.3 Instructions list

17.3.1 067_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 | | Celiwe Sokhela - 491462 | TC2 |
| 10002 | I | Initial conditions | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10003 | I | Car Should be Prepared | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10004 | I | Fire Detection Control | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10005 | I | Fire Detection Train Lines Dev4/76 = END2 90XP14 pin 21 Dev2/7 = END1 Coupler pin 008 Dev2/33 = END1 Coupler pin 108 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10006 | A | Force [NI] Dev4/76 = 1.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10007 | R | Read Defined Variable [NI] Dev2/7 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10008 | R | Read Defined Variable [NI] Dev2/33 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10009 | A | Check on the Alarm Module that the Fire Alarm 67H1 is illuminated | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10010 | I | Fire Detection Train Lines Dev4/76 = END2 90XP14 pin 21 Dev2/7 = END1 Coupler pin 008 Dev2/33 = END1 Coupler pin 108 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10011 | A | Force [NI] Dev4/76 = 0.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10012 | R | Read Defined Variable [NI] Dev2/7 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10013 | R | Read Defined Variable [NI] Dev2/33 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |

| | | | | | | | |
|-------|---|--|--|----|--|-------------------------|-----|
| 10014 | A | Check on the Alarm Module that the Fire Alarm 67H1 is OFF | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10015 | I | Continuity Check | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10016 | A | Check the continuity between the two provided points of the line below | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10017 | A | From: [(local: +END2 connector - 90XP13.b (pin 4))] to: [-67A1 (local: +END2 connector -90XP13.a (pin 7))] | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10018 | A | From: [(local: +END2 connector - 90XP13.b (pin 5))] to: [-67A1 (local: +END2 connector -90XP13.a (pin 8))] | | OK | | Celiwe Sokhela - 491462 | TC2 |

Section 18 – Driving Command

18.3 Instructions list

18.3.1 030_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 | | Thandanani Makhanya - 463827 | TC2 |
| 10002 | I | Initial conditions | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10003 | I | Cabin should be active | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10004 | A | Ensure all the doors are closed | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10005 | A | Ensure that there is air connected to the main pipe | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10006 | A | Force [TT] (BCU1)li_mp_ps_ok = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10007 | I | Circuit Breakers | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10008 | A | Close Circuit Breaker "30Q1" | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10009 | A | Close Circuit Breaker "30Q2" | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10010 | A | Close Circuit Breaker "30Q3" | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10011 | A | Close Circuit Breaker "31Q1" | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10012 | I | Direction Selector Switch | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10013 | I | Set the Running Direction Switch 30A1.S2 to "Neutral" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10014 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10015 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10016 | I | Set the Running Direction Switch 30A1.S2 to "Reverse" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10017 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10018 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|---|---------------------------------|-----|
| 10019 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsreverser1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10020 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsreverser2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10021 | I | Reverse Train lines Dev2/28 = coupler pin 011 Dev2/29 = coupler pin 132 Dev5/78 = END2 90XP15 pin 30 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10022 | R | Read Defined Variable [NI] Dev2/28 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10023 | R | Read Defined Variable [NI] Dev2/29 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10024 | R | Read Defined Variable [NI] Dev5/78 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10025 | I | Set the Running Direction Switch 30A1.S2 to "Forward" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10026 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10027 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsreverser1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10028 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsreverser2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10029 | R | Read Defined Variable [NI] Dev2/28 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10030 | I | Reverse Train lines Dev2/28 = coupler pin 011 Dev2/29 = coupler pin 132 Dev5/78 = END2 90XP15 pin 30 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10031 | R | Read Defined Variable [NI] Dev2/29 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10032 | R | Read Defined Variable [NI] Dev5/78 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10033 | I | Forward Train lines Dev2/26 = coupler pin 032 Dev2/27 = coupler pin 111 Dev5/35 = END2 90XP15 pin 25 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10034 | R | Read Defined Variable [NI] Dev2/26 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10035 | R | Read Defined Variable [NI] Dev2/27 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10036 | R | Read Defined Variable [NI] Dev5/35 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |

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| 10037 | I | Set the Running Direction Switch 30A1.S2 to "Neutral" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10038 | R | Read Defined Variable [NI] Dev2/26 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10039 | I | Forward Train lines Dev2/26 = coupler pin 032 Dev2/27 = coupler pin 111 Dev5/35 = END2 90XP15 pin 25 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10040 | R | Read Defined Variable [NI] Dev2/27 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10041 | R | Read Defined Variable [NI] Dev5/35 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10042 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsnozeror1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10043 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dsreverser1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10044 | I | Driving Mode | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10045 | A | Turn the Driving Mode Switch 30S1 to "Speed" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10046 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10047 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10048 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10049 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10050 | A | Turn the Driving Mode Switch 30S1 to "Effort" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10051 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10052 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit3r1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10053 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10054 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|---|--|----|---|---------------------------------|-----|
| 10055 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10056 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10057 | A | Turn the Driving Mode Switch 30S1 to "Depot" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10058 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10059 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10060 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10061 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit3r1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10062 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10063 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10064 | A | Turn the Driving Mode Switch 30S1 to "Couple/Wash" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10065 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit1r1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10066 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit2r1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10067 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit3r1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10068 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit3r2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10069 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10070 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2dmodebit4r2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10071 | I | Reduced Power | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10072 | A | Press and hold the Reduced Power Pushbutton 30S2 | | OK | | Thandanani Makhanya - 463827 | TC2 |


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|-------|---|--|--|----|------|---------------------------------|-----|
| 10073 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2reducedpowerr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10074 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2reducedpowerr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10075 | A | Release the Reduced Power Pushbutton 30S2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10076 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2reducedpowerr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10077 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2reducedpowerr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10078 | A | Force [TT] (MPU1)lo_drc_tc2reducedlampr1 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10079 | R | Check that the Reduced Power Pushbutton lamp is ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10080 | A | Release [TT] (MPU1)lo_drc_tc2reducedlampr1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10081 | R | Check that the Reduced Power Pushbutton lamp is OFF | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10082 | A | Force [TT] (MPU1)lo_drc_tc2reducedlampr2 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10083 | R | Check that the Reduced Power Pushbutton lamp is ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10084 | A | Release [TT] (MPU1)lo_drc_tc2reducedlampr2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10085 | R | Check that the Reduced Power Pushbutton lamp is OFF | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10086 | I | Master Controller Traction / No Brake | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10087 | I | The Master Controller should be in "OFF" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10088 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch1 : 5479<= x <= 6369 | | OK | 5920 | Thandanani Makhanya - 463827 | TC2 |
| 10089 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch2 : 5479<= x <= 6369 | | OK | 6016 | Thandanani Makhanya - 463827 | TC2 |


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|-------|---|--|--|----|---|---------------------------------|-----|
| 10090 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10091 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10092 | I | No Brake Train lines Dev2/32 = coupler pin 039 Dev2/8 = coupler pin 139 Dev5/82 = 90XP15 pin 32 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10093 | R | Read Defined Variable [NI] Dev2/32 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10094 | R | Read Defined Variable [NI] Dev2/8 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10095 | R | Read Defined Variable [NI] Dev5/82 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10096 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuTINoBr = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10097 | I | Ensure that the blue mushroom is released | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10098 | A | Turn Emergency Braking Loop Override Switch 44S2 to BYPASS | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10099 | I | Emergency Brake Train Line Dev 4/61 = 90XP15 pin 67 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10100 | A | Force [NI] Dev4/61 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10101 | R | Read Defined Variable [NI] Dev2/84 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10102 | R | Read Defined Variable [NI] Dev2/85 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10103 | A | Turn the Traction Interlock Override Switch 31S1 to "Override" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10104 | R | Check that the indicator lamp 31H1 is ON | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10105 | I | Emergency Brake Train Loop Dev 4/61 = 90XP15 pin 67 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10106 | A | Force [NI] Dev4/61 = 0.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10107 | R | Read Defined Variable [NI] Dev2/84 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10108 | R | Read Defined Variable [NI] Dev2/85 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|--|--|----|-------|---------------------------------|-----|
| 10109 | A | Turn the Emergency Braking Loop Override Switch 44S2 to NORMAL | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10110 | A | Check that the indicator lamp 31H1 is OFF | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10111 | A | Place the Master Controller in "100% Traction" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10112 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch1 : 29183<= x <= 31102 | | OK | 30832 | Thandanani Makhanya - 463827 | TC2 |
| 10113 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch2 : 29183<= x <= 31102 | | OK | 30928 | Thandanani Makhanya - 463827 | TC2 |
| 10114 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mctractonr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10115 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mctractonr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10116 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10117 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10118 | I | No Brake Train line Dev2/32 = coupler pin 039 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10119 | R | Read Defined Variable [NI] Dev2/32 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10120 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuTINoBr = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10121 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuTITract = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10122 | I | Traction Train lines Dev2/30 = coupler pin 026 Dev2/31 = coupler pin 126 Dev5/41 = END2 90XP15 pin 31 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10123 | R | Read Defined Variable [NI] Dev2/30 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10124 | R | Read Defined Variable [NI] Dev2/31 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10125 | R | Read Defined Variable [NI] Dev5/81 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |

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| 10126 | A | Place the Master Controller in "100% Service Brake" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10127 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch1 : 29183<= x <= 31102 | | OK | 30288 | Thandanani Makhanya - 463827 | TC2 |
| 10128 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch2 : 29183<= x <= 31102 | | OK | 30928 | Thandanani Makhanya - 463827 | TC2 |
| 10129 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10130 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10131 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mctractior1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10132 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mctractior2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10133 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10134 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcemergencybraker1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10135 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcemergencybraker2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10136 | I | No Brake Train lines Dev2/32 = coupler pin 039 Dev2/8 = coupler pin 139 Dev5/82 = 90XP15 pin 32 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10137 | R | Read Defined Variable [NI] Dev2/32 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10138 | R | Read Defined Variable [NI] Dev2/8 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10139 | R | Read Defined Variable [NI] Dev5/82 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10140 | I | Traction Train lines Dev2/30 = coupler pin 026 Dev2/31 = coupler pin 126 Dev5/81 = END2 90XP15 pin 31 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10141 | R | Read Defined Variable [NI] Dev2/30 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|--|--|----|-------|---------------------------------|-----|
| 10142 | R | Read Defined Variable [NI] Dev2/31 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10143 | R | Read Defined Variable [NI] Dev5/81 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10144 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuTINoBr = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10145 | R | Read Defined Variable [TT] (MPU1)BCU2_BcuTITract = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10146 | A | Place the Master Controller in "Emergency Brake" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10147 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch1 : 29183<= x <= 31102 | | OK | 30848 | Thandanani Makhanya - 463827 | TC2 |
| 10148 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch2 : 29183<= x <= 31102 | | OK | 30928 | Thandanani Makhanya - 463827 | TC2 |
| 10149 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10150 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10151 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10152 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcemergencybraker1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10153 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcemergencybraker2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10154 | A | Place the Master Controller in "OFF" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10155 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch1 : 5479<= x <= 6369 | | OK | 5920 | Thandanani Makhanya - 463827 | TC2 |
| 10156 | R | Read Min/Max [TT] (MPU1)ai_drc_tc2mcpositionch2 : 5479<= x <= 6369 | | OK | 6016 | Thandanani Makhanya - 463827 | TC2 |
| 10157 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcnoastr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|--|---|----|---|---------------------------------|-----|
| 10158 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10159 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2mcbraker2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10160 | I | Traction Interlock | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10161 | I | Traction Interlock Override | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10162 | I | Traction Interlock Train lines Dev2/34 = coupler pin 006 Dev2/35 = coupler pin 106 Dev5/83 = END2 90XP15 pin 41 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10163 | R | Read Defined Variable [NI] Dev2/34 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10164 | R | Read Defined Variable [NI] Dev2/35 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10165 | R | Read Defined Variable [NI] Dev5/83 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10166 | I | Traction Interlock Bypass Train Line Dev5/4 = END2 90XP14 pin 6 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10167 | R | Read Defined Variable [NI] Dev5/4 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10168 | R | Read Defined Variable [TT] (BCU2)LI_NOT_INHIB = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10169 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractintoverrider1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10170 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractintoverrider2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10171 | R | Check that the Indicator Lamp 31H2 is ON |  | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10172 | A | Turn the Traction Interlock Override Switch 31S1 to "Normal" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10173 | I | Traction Interlock Train lines Dev2/34 = coupler pin 006 Dev2/35 = coupler pin 106 Dev5/83 = END2 90XP15 pin 41 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10174 | R | Read Defined Variable [NI] Dev2/34 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10175 | R | Read Defined Variable [NI] Dev2/35 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10176 | R | Read Defined Variable [NI] Dev5/83 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |

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| 10177 | I | Traction Interlock Bypass Train Line Dev5/4 = END2 90XP14 pin 6 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10178 | R | Read Defined Variable [NI] Dev5/4 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10179 | R | Read Defined Variable [TT] (BCU2)LI_NOT_INHIB = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10180 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractintoverrider1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10181 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractintoverrider2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10182 | R | Check that the Indicator Lamp 31H2 is OFF |  | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10183 | I | Traction Interlock Relay | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10184 | A | Open Circuit Breaker "30Q1" | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10185 | A | Open Circuit Breaker "30Q2" | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10186 | I | Set the Running Direction Switch 30A1.S2 to "Forward" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10187 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP15 pin 96 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10188 | A | Force [NI] Dev4/89 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10189 | A | Force [TT] (MPU1)lo_drc_tc2tractionloopr1 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10190 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 9 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10191 | A | Force [NI] Dev4/5 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10192 | A | Force [TT] (MPU1)lo_ubk_tc2emergbraker1 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10193 | A | Turn the Dead Man Override Switch 60S1 to "Override" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10194 | A | Turn the ERTMS Isolation switch 62S1 to "Isolation" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10195 | I | Traction Interlock Train lines Dev5/83 = END2 90XP15 pin 41 | | OK | | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|--|----|----|---|---------------------------------|-----|
| 10196 | R | Read Defined Variable [NI] Dev5/83 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10197 | R | Read Defined Variable [TT] (MPU1)li_ubk_tc2emergrelay1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10198 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10199 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr2 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10200 | R | Check that the Indicator Lamp 31H1 is ON | TA | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10201 | A | Press and Activate the Mushroom switch 44S1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10202 | R | Check that the Indicator Lamp 31H1 is OFF | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10203 | A | Release the Mushroom switch 44S1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10204 | R | Check that the Indicator Lamp 31H1 is ON | TA | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10205 | A | Place the Master Controller in "100% Traction" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10206 | I | Traction Train lines Dev5/81 = END2 90XP15 pin 31 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10207 | R | Read Defined Variable [NI] Dev5/81 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10208 | A | Place the Master Controller in "Neutral" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10209 | A | Close Circuit Breaker "30Q1" | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10210 | A | Close Circuit Breaker "30Q2" | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10211 | I | Set the Running Direction Switch 30A1.S2 to "Neutral" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10212 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10213 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr2 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10214 | I | Traction Interlock Train lines Dev5/83 = END2 90XP15 pin 41 | | OK | | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|--|----|----|---|---------------------------------|-----|
| 10215 | R | Read Defined Variable [NI] Dev5/83 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10216 | R | Check Indicator Lamp 31H1 is OFF | TA | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10217 | A | Release [TT] (MPU1)lo_drc_tc2tractionloopr1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10218 | A | Force [TT] (MPU1)lo_drc_tc2tractionloopr2 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10219 | I | Set the Running Direction Switch 30A1.S2 to "Reverse" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10220 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10221 | R | Check Indicator Lamp 31H1 is ON | TA | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10222 | I | Traction Authorization at V>5km/h | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10223 | I | Safety Doors Loop Train Line Dev4/89 = END2 90XP15 pin 96 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10224 | A | Force [NI] Dev4/89 = 0.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10225 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10226 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10227 | A | Force [NI] Dev4/38 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10228 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 0.0 | | OK | 0 | Thandanani Makhanya - 463827 | TC2 |
| 10229 | I | PEA Loop Train Line Dev4/62 = END2 90XP15 pin 95 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10230 | A | Force [NI] Dev4/62 = 1.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10231 | R | Read Defined Variable [TT] (MPU1)li_drc_tc2tractionauthorr1 = 1.0 | | OK | 1 | Thandanani Makhanya - 463827 | TC2 |
| 10232 | I | PEA Loop Train Line Dev4/62 = END2 90XP15 pin 95 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10233 | A | Force [NI] Dev4/62 = 0.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |

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|-------|---|--|--|----|--|---------------------------------|-----|
| 10234 | I | V>5km/h Train Line Dev4/38 = END2 90XP15 pin 28 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10235 | A | Force [NI] Dev4/38 = 0.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10236 | I | Emergency Brake Loop Train Line Dev4/5 = END2 90XP14 pin 9 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10237 | A | Force [NI] Dev4/5 = 0.0 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10238 | A | Release [TT] (MPU1)lo_ubk_tc2emergbraker1 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10239 | A | Release [TT] (MPU1)lo_drc_tc2tractionloopr2 | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10240 | I | Set the Running Direction Switch 30A1.S2 to "Normal" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10241 | A | Turn the Dead Man Override Switch 60S1 to "Normal" position | | OK | | Thandanani Makhanya - 463827 | TC2 |
| 10242 | A | Turn the ERTMS Isolation switch 62S1 to "Normal" position | | OK | | Thandanani Makhanya - 463827 | TC2 |



Serial Tests Report
TS221 – TC2 – VFT
RTR Vehicle Functional Static Testing Report

Document Reference
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Version: A0

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14/05/2024

Section 19 – Train-Ground Communication


19.3 Instructions list



19.3.1 062_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 | | Celiwe Sokhela - 491462 | TC2 |
| 10002 | A | Ensure Circuit Breaker 62Q1 is OPEN | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10003 | I | DMI Power Supply | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10004 | A | Use the following procedure to perform Electrical check on the DMI power supply |  | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10005 | A | Close Circuit Breaker 62Q1 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10006 | R | The ERTMS Display Unit (MMI) is powered ON | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10007 | A | Place the ERTMS Isolation Switch 62S1 in Isolation position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10008 | R | The ERTMS Display Unit (MMI) is powered OFF | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10009 | I | DMI Software Upload | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10010 | A | Use the following procedure to upload the DMI software |  | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10011 | I | Emergency Brake By ERTMS | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10012 | I | Emergency Brake ERTMS Train lines Dev4/88 =END2 Emergency Brake ERTMS 1 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10013 | A | Force [NI] Dev4/88 = 1.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10014 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10015 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r2 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10016 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |

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|-------|---|---|--|----|---|----------------------------|-----|
| 10017 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r2 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10018 | I | Emergency Brake ERTMS Train lines Dev4/80 =END2 Emergency Brake ERTMS 2 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10019 | A | Force [NI] Dev4/80 = 1.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10020 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10021 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r2 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10022 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10023 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r2 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10024 | A | Force [NI] Dev4/88 = 0.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10025 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10026 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r2 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10027 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10028 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r2 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10029 | A | Force [NI] Dev4/80 = 0.0 | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10030 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10031 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk1r2 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10032 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10033 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsebk2r2 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10034 | I | ERTMS Bypass/Reset | | OK | | Celiwe Sokhela - 491462 | TC2 |

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|-------|---|--|---|----|---|----------------------------|-----|
| 10035 | I | ERTMS Bypass Train Lines Dev2/5 = coupler pin 036 Dev2/6 = coupler pin 136 Dev5/8 = END2 train line | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10036 | R | Read Defined Variable [NI] Dev2/5 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10037 | R | Read Defined Variable [NI] Dev2/6 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10038 | R | Read Defined Variable [NI] Dev5/8 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10039 | A | Turn cab key 30A1.S1 to non-active cab position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10040 | R | Read Defined Variable [NI] Dev2/5 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10041 | R | Read Defined Variable [NI] Dev2/6 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10042 | R | Read Defined Variable [NI] Dev5/8 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10043 | A | Turn cab key 30A1.S1 to active cab position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10044 | A | Place the ERTMS Isolation Switch 62S1 in Normal position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10045 | R | Read Defined Variable [NI] Dev2/5 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10046 | R | Read Defined Variable [NI] Dev5/8 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10047 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsbypassr1 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10048 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsbypassr2 = 0.0 | | OK | 0 | Celiwe Sokhela - 491462 | TC2 |
| 10049 | R | The indicator Lamp 62H1 is OFF |  | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10050 | A | Place the ERTMS Isolation Switch 62S1 in Isolation position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10051 | R | Read Defined Variable [NI] Dev2/5 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10052 | R | Read Defined Variable [NI] Dev5/8 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10053 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsbypassr1 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |
| 10054 | R | Read Defined Variable [TT] (MPU1)li_ets_tc2ertmsbypassr2 = 1.0 | | OK | 1 | Celiwe Sokhela - 491462 | TC2 |

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|-------|---|--|---|----|--|-------------------------|-----|
| 10055 | R | The indicator Lamp 62H1 is ON |  | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10056 | A | Place the ERTMS Isolation Switch 62S1 in Normal position | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10057 | I | Eurobalise Antenna Cable | | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10058 | A | Check continuity between [Inter-car (LOCAL: +END2; Connector -90XR10) and Eurobalise Antenna (LOCAL: +UCA; connector -62XP3_X1] according to the image |  | OK | | Celiwe Sokhela - 491462 | TC2 |
| 10059 | R | Eurobalise Antenna cable is correctly configured | | OK | | Celiwe Sokhela - 491462 | TC2 |

19.3.2 063_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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10002 | A | Turn Driver Key 30A1.S1 to Active Cab position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10003 | I | UHF Radio | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10005 | I | Tester Calibration | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10006 | I | PERFORM THIS CALIBRATION BEFORE TESTING EACH CABLE | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10007 | A | Select "preset", then Set the test frequency by selecting "FREQ/DIST" then setting the start and stop frequency, select "calibrate", then "Full 1-port" then Calibrate the Antenna cable tester using the 0.5m extension cable and the T-calibration unit. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10008 | I | Relay 63D1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10009 | A | Check for continuity between pins B3, B4 and C3 of relay 63D1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10010 | R | All points are continuous with each other | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10011 | I | Power Supply | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10012 | A | Close Circuit Breaker 63Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10013 | R | Check that the UHF Radio is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10014 | A | Open Circuit Breaker 63Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10015 | R | Check that the UHF Radio is OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|--|--|----|--|-------------------------|-----|
| 10016 | A | Turn the UHF Radio Emergency Supply switch 63S1 to the "Emergency" position, and release it | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10017 | R | Check that the UHF Radio is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10018 | 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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10019 | R | After 10 minutes the UHF Radio turns OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10020 | I | GSMR Radio | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10021 | I | Relay 65D1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10022 | A | Check for continuity between pins B3, B4 and C3 of relay 65D1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10023 | R | All points are continuous with each other | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10024 | I | Power Supply GSM_RADIO | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10025 | A | Close Circuit Breaker 65Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10026 | R | Check that the GSM Radio is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10027 | A | Open Circuit Breaker 65Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10028 | R | Check that the GSM Radio is OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10029 | A | Close Circuit Breaker 65Q1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10030 | A | Turn the GSM Radio Emergency Supply switch 65S1 to the "Emergency" position, and release it | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10031 | R | Check that the GSM Radio is ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 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 | | Sqiniseko Xulu - 493646 | TC2 |
| 10033 | R | After 10 minutes the GSM Radio turns OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |

| | | | | | | | |
|-------|---|---|--|----|--|-------------------------|-----|
| 10034 | I | HMI Power On | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10035 | I | Proceed with the following steps after the Radio has turned OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10036 | A | Close Circuit Breaker 65Q2 - allow time for the Radio to turn ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10037 | A | Turn Driver Key 30A1.S1 to Non-Active Cab position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10038 | A | Reset (Off then On) Circuit Breaker 20Q2 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10039 | R | The GSMR HMI Screen turns OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10040 | A | Turn the GSM Radio Emergency Supply switch 65S1 to the "Emergency" position, and release it | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10041 | R | The GSMR HMI Screen turns ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10042 | A | Open Circuit Breaker 65Q1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10043 | R | The GSMR HMI Screen turns OFF | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10044 | A | Turn Driver Key 30A1.S1 to Active Cab position | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10045 | R | The GSMR turns ON | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10046 | A | Close Circuit Breaker 65Q1 | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10047 | I | Handset and Loudspeaker Volume | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10048 | A | Pick up the GSM-R handset. On the GSM-R, press the "11" key | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10049 | R | On the GSM-R MMI, volume symbol flashes above the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10050 | A | Adjust the volume using the arrow upward (louder) or arrow downward (quieter) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10051 | R | The sound change is audible (in the handset and visible on MMI) immediately | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10052 | A | On the GSM-R, press the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |

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|-------|---|--|--|----|--|-------------------------|-----|
| 10053 | R | On the GSM-R MMI, volume symbol is no longer flashing above the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10054 | A | Hang up the GSM-R handset. On GSM-R M, Press the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10055 | R | On the GSM-R MMI, volume symbol flashes above the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10056 | A | Adjust the volume using the arrow upward (louder) or arrow downward (quieter) | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10057 | R | The sound change is audible (in the loudspeaker located in the ceiling and visible on MMI) immediately | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10058 | A | On the GSM-R, press the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |
| 10059 | R | On the GSM-R M, volume symbol is no longer flashing above the "11" key. | | OK | | Sqiniseko Xulu - 493646 | TC2 |



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Version: A0

Emission date
14/05/2024

Section 20 – Vehicle Normalization

20.3 Instructions list

20.3.1 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 | | Nqobile Chirwa - 484648 | TC2 |
| 10002 | I | This inspection must be performed by the EPU/Acting EPU Manager on shift | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10003 | I | The VFT procedures are all completed | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10004 | I | Vehicle Normalization Check | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10005 | R | On LV1 all Circuit Breakers are installed and secured | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10006 | R | On LV1 all Switches and Buttons are installed properly | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10007 | R | On LV1 all Relays and Timers are installed and secured | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10008 | R | On LV1 all Dataplugs are installed, tightened and earth braids are fastened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10009 | R | On LV1 BRIOMs are properly installed | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10010 | R | On LV1 all UMC Rack cards are installed properly | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10011 | R | On LV1 all Connectors are tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10012 | R | On LV1 there are no missing components, device, wiring or connectors. | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10013 | R | On LV2 the MCE is installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10014 | R | On LV2 the GSMR-Radio is installed and properly tightened and its connectors are tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10015 | R | On LV2 the UHF-Radio is installed and properly tightened and its connectors are tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |

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| 10016 | R | On LV2 OTDR is installed and properly tightened, and its connectors are tightened. | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10017 | A | On LV2 CPM is installed and properly tightened, and its connectors are tightened. | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10018 | R | On LV2 all Circuit Breakers are installed and secured | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10019 | R | On LV2 all Connectors are tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10020 | R | On LV2 there are no missing components, device, wiring or connectors. | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10021 | A | On the Driver's Desk, all Switches and Buttons are installed properly. Refer to the image |  | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10022 | R | On the Driver's Desk, DDU is installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10023 | R | On the Driver's Desk, ERTMS HMI is installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10024 | R | On the Driver's Desk, GSMR HMI and Handset are installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10025 | R | On the Driver's Desk, Speedometer is installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10026 | R | On the Driver's Desk, Pressure Gauge is installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10027 | R | On the Driver's Desk, Alarm Module is installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10028 | R | On the Driver's Desk, Voltage/Traction Indicator is installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10029 | R | On the Driver's Desk, Master Controller is installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10030 | R | On the UDM, all connectors are tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10031 | R | On the UDR, Wiper Controller is properly installed | | OK | | Nqobile Chirwa - 484648 | TC2 |

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| 10032 | R | On the UDL, BRIOMs are properly installed | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10033 | R | CPM is properly installed and secured | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10034 | R | Driver Foot Heater is properly installed | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10035 | R | On the Cab Ceiling, Lights are all properly installed | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10036 | R | On the Cab Ceiling, Speakers are all properly installed | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10037 | R | On the Cab Ceiling, Fire Detector is properly installed and secured | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10038 | R | On the Cab Ceiling, Frontal Camera is properly installed | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10039 | R | All DCUs are properly installed and secured | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10040 | R | All Internal Displays are properly installed and secured | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10041 | R | All Light Covers are properly installed | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10042 | R | All Saloon Cameras are properly installed | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10043 | R | All PEAs and PEIs are properly installed | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10044 | R | On LV7 all Dataplugs are installed, tightened and earth braids are fastened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10045 | R | On HC Cubicle the Controller is installed and properly tightened and its connectors are tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10046 | R | On the LVB, all Relays and Timers are installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10047 | R | On the LVB, all Circuit Breakers are installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10048 | R | On the Underframe, CVS Agate is installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10049 | R | On the Underframe, Speed Sensors are installed and properly tightened | | OK | | Nqobile Chirwa - 484648 | TC2 |

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| 10050 | R | On the Underframe, Battery Box cables are properly connected | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10051 | R | ALL underframe covers are normalised | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10052 | R | On END1 the Octopus cables are disconnected from the coupler and properly stored. | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10053 | R | On END2 the Octopus cables are disconnected from the car and properly stored. | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10054 | R | The Test Bench is switched OFF and Octopus is disconnected and properly stored | | OK | | Nqobile Chirwa - 484648 | TC2 |
| 10055 | R | ALL P.Os of this car are closed | | OK | | Tshegofatso Setshogwe - 404572 | TC2 |
| 10056 | I | End Of Test | | OK | | Tshegofatso Setshogwe - 404572 | TC2 |



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Section 19 – Report summaries

19.2 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 Signaling | X | | |
| Energy Distribution | X | | |
| Emergency Brake | X | | |
| Driving Command | X | | |
| Driver Desk Illumination | X | | |
| Dead Man | X | | |
| Cabin Control | X | | |

19.3 Tools used

| Function | Tool name | Tool number | Next Calibration date |
|----------|------------|--------------|-----------------------|
| 015_NRG | Phasemeter | Phasemeter | 8/25/2024 |
| 040_SBK | Manometer | Manometer | 7/31/2024 |
| 045_PBK | Manometer | Manometer | 7/31/2024 |
| 057_HVA | Anemometer | Anemometer 1 | 8/25/2024 |



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|--|--|-----------------------------|

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|-------------|----------------|----------------|-----------|
| 063_065_COM | GSM-R - tester | Radio Analyser | 8/23/2024 |
| 067_FSD | Multimeter | Multimeter 2 | 8/23/2024 |
| 070_SIG_2 | Manometer | Manometer | 7/31/2024 |

| Vehicle | Equipment | Expected version | Version loaded |
|---------|-----------|------------------|----------------|
| TC2 | | | |