Technical Software Specifications - SPS TestManager

Automotive software package Burst-Surge v1.1

The software package supplies only line conducted tests.
TestManager version SPS TestManager v2.18 or higher is required.
The required hardware can also be seen in the hardware matrix.
(Not all tests from each standard are supported)

List of standards and tests supported by the SPS TestManager software:

BMW GS 95002

- 2010-06
  - 7.2.1 Galvanic test
  - 7.2.2 Capacitive test using the coupling clamp

BMW GS 95002-2

- 2013-07
  - 4.7 Transient emissions on supply lines (CTE)
  - 5.7 Transients on supply lines (TSUP)
  - 5.8 Transients on lines except for supply lines (TOL)
- 2019-10
  - 4.11 Transient emissions on supply lines (CTE)
  - 5.7 Transients on supply lines (TSUP)
  - 5.8 Transients on lines except for supply lines (TOL)
- 2021-05
  - 5.9 Transient emissions on supply lines (CTE)
  - 6.8 Transients on supply lines (TSUP)
  - 6.9 Transients on lines except for supply lines (TOL)
- 2025-03
  - 6.9 Transient emissions on supply lines (CTE)
  - 7.7 Transients on supply lines (TSUP)
  - 7.8 Transients on lines except for supply lines (TOL)

FCA CS.00054

2018-01

- 5.2 Electrical System Operating Requirement
  - 5.2.1 Supply Voltage Range
  - 5.2.2 Ignition Off Draw (IOD)
  - 5.2.3 Supply Voltage Ripple
- 5.3 Supply Voltage Variations
  - 5.3.1 Sneak Path
  - 5.3.2 Supply Voltage Drop Out
  - 5.3.3 Power Supply Disconnection
  - 5.3.4. Reset behaviour at voltage drop
  - 5.3.5 Supply Voltage Dips
  - 5.3.6 Engine Cranking Low Voltage - Resembling Cold Cranking
  - 5.3.7 Engine Cranking Low Voltage - Warm Cranking / Stop- Start
  - 5.3.8 Slow decrease and increase of supply voltage
- 5.4 Supply Over Voltage and Reverse Voltage
  - 5.4.1 Defective Regulation
  - 5.4.2 Reverse Supply Voltage
- 5.5 Electronical System Compatibility Requirements
  - 5.5.1 Immunity to Short Circuits in the Supply Voltage Input and Load Outputs Lines
  - 5.5.2 Immunity to Short Circuits in I/O Signal Lines
- 5.7 Conducted Transient Emissions
  - Fast pulse without internal switch
  - Fast pulse with internal switch
- 5.9 Transient Immunity
  - 5.9.1 Transient Immunity of Supply Lines
  - 5.9.2 Transient Immunity of I/O or Sensor Lines (CCC)
  - 5.9.3 Transient Immunity of I/O or Sensor Lines (DCC)
  - 5.9.4 Transient Immunity of LED Lighting Power Lines

Fiat 9.90111-01

2012-06

- 4.1 Electrical System operating Environment
  - 4.1.1 Supply Voltage Range
  - 4.1.2 Ignition Off Current Draw (IOD)
  - 4.1.3 Supply Voltage Ripple
- 4.2 Supply Voltage Variations
  - 4.2.1 Sneak Path
  - 4.2.2 Supply Voltage Drop Out
  - 4.2.3 Power Supply Disconnection
  - 4.2.4. Reset behaviour at voltage drop
  - 4.2.5 Supply Voltage Dips
  - 4.2.6 Engine Cranking Low Voltage - Resembling Cold Cranking
  - 4.2.7 Engine Cranking Low Voltage - Warm Cranking / Stop- Start
  - 4.2.8 Slow decrease and increase of supply voltage
- 4.3 Supply Over Voltage and Reverse Voltage
  - 4.3.1 Defective Regulation
  - 4.3.2 Reverse Supply Voltage
- 4.4 Electronical System Compatibility Requirements
  - 4.4.1 Immunity to Short Circuits in the Supply Voltage Input and Load Outputs Lines
  - 4.4.2 Immunity to Short Circuits in I/O Signal Lines
- 5.4 Conducted Transient Emissions
  - Fast pulse without internal switch
  - Fast pulse with internal switch
- 6.4 Transient Immunity
  - 6.4.1 Transient Immunity of Supply Lines
  - 6.4.2 Transient Immunity of I/O or Sensor Lines (CCC)
  - 6.4.3 Transient Immunity of I/O or Sensor Lines (DCC)
  - 6.4.4 Transient Immunity of LED Lighting Power Lines

GMW 3097

2012-04

- 3.5.1 CE Transients
- 3.5.2 CI Transients (Power Lines)
- 3.5.3 CI Coupling to I/O Lines
- 3.5.4 CI Direct Coupling to Sensor lines
- 3.5.5 CI 85 V Direct Capacitor Coupling (DCC)
- 3.5.6 CI Alternator Direct Capacitor Coupling

2015-06

- 3.5.1 CE Transients
- 3.5.2 CI Nominal 12V Lines
- 3.5.3 CI Coupling to I/O
- 3.5.4 CI Direct Coupling to Sensor lines
- 3.5.5 CI Coupling (DCC on I/O and regulated supply lines, 85 V)
- 3.5.6 CI Alternator Direct Capacitor Coupling

Honda 1901Z-XP7F-V010

2010

- 6.1 Overvoltage application test
- 6.2 Reverse voltage application test
- 6.7 Immunity transient surge tests (Power supply line pulse 1)
- 6.8 Immunity transient surge tests (Power supply line pulse 2a)
- 6.9 Immunity transient surge tests (Power supply line pulse 3a)
- 6.10 Immunity transient surge tests (Power supply line pulse 3b)
- 6.13 Immunity transient surge tests (Signal line ISO Fast pulse a)
- 6.14 Immunity transient surge tests (Signal line ISO Fast pulse b)
- 6.16 Immunity transient surge tests (ICC method)
- 6.17 (+) Surrge application test
- 6.20 Power supply fluctuation test

2010-10

- 6.1 Overvoltage application test
- 6.2 Reverse voltage application test
- 6.7 Immunity transient surge tests (Power supply line pulse 1)
- 6.8 Immunity transient surge tests (Power supply line pulse 2a)
- 6.9 Immunity transient surge tests (Power supply line pulse 3a)
- 6.10 Immunity transient surge tests (Power supply line pulse 3b)
- 6.13 Immunity transient surge tests (Signal line ISO Fast pulse a)
- 6.14 Immunity transient surge tests (Signal line ISO Fast pulse b)
- 6.16 Immunity transient surge tests (ICC method)
- 6.17 (+) Surrge application test
- 6.20 Power supply fluctuation test

Hyundai/Kia ES96200-00

2015-01

- 5.4.1 Transient Immunity: Supply lines
- 5.4.2 Transient Immunity: Signal lines - Capacitive Coupling Clamp (CCC)
- 5.4.3 Transient Immunity: Signal lines - Capacitive Coupling Clamp (ICC)

ISO 7637-2
- 2004-06
  - 4.3 Voltage transients emission tests
  - 5.6 Test pulse generator for immunity testing
- 2011-03
  - 4.3 Voltage transients emission tests
  - 5.6 Test pulse generator for immunity testing

ISO 7637-3
- 2016-07
  - 5.3.2 Slow transient pulses test
  - 5.3.3 Fast transient pulses test

MAN M 3285
- 2017-07
  - 6.1 Interference voltage peaks on supply lines
    - 6.1.1 Interference immunity
    - 6.1.2 Emitted interference
  - 6.2 Coupled interference on signal and control lines
    - Nominal 12 V system
    - Nominal 24 V system

MBN 50284-2
- 2023-02
  - 13 Transient emissions – CTE test: Supply lines
  - 19 Transient immunity – TSUP test: Supply lines
  - 20 Transients immunity - TOL test: Other lines

Mitsubishi ES-X82114
- 2007-04
  - 6.7 Conducted Transient Emissions
  - 9.1 Transient Disturbances Conducted along Supply Lines
  - 9.2 Transient Disturbances Conducted along I/O or Sensor Lines

Nissan 28401NDS02

- 2002-04
  - 6.1. Resistance to electrical disturbances tests
    - 6.1.1. EQ/TE 01: Resistance to power supply voltages
    - 6.1.2. EQ/TE 02: Resistance to slow decrease and increase of supply voltages
    - 6.1.3. EQ/TE 03: Re-initialization test
    - 6.1.4. EQ/TE 04: Resistance to non usual power supply voltages
    - 6.1.5. EQ/TE 05: Resistance to ground and positive supply voltages short circuit
    - 6.1.6. EQ/IC 01: Resistance to pulses 1, 1 bis and 2a
    - 6.1.7. EQ/IC 02: Resistance to pulses 3a and 3b
    - 6.1.8. EQ/IC 10: Resistance of inductive load connected circuits
    - 6.1.9 EQ/IC 03: Resistance to pulses 5a and/or 5b
    - 6.1.10. EQ/IC 04: Resistance to power supply micro-interruptions
    - 6.1.11. EQ/IC 05: Resistance to starting profile
    - 6.1.12. EQ/IC 06: Resistance to on-board power system voltage ripples
  - 6.2. Immunity to conducted disturbance tests
    - 6.2.1. EQ/IC 07: Immunity to signal line transients
- 2016-03
  - 6.1. Resistance to electrical disturbances tests
    - 6.1.1. EQ/TE 01: Resistance to power supply voltages
    - 6.1.2. EQ/TE 02: Resistance to slow decrease and increase of supply voltages
    - 6.1.3. EQ/TE 03: Re-initialization test
    - 6.1.4. EQ/TE 04: Resistance to non usual power supply voltages
    - 6.1.5. EQ/TE 05: Resistance to ground and positive supply voltages short circuit
    - 6.1.6. EQ/IC 01: Resistance to pulses 1, 1 bis, 2a and 2b
    - 6.1.7. EQ/IC 02: Resistance to pulses 3a and 3b
    - 6.1.8. EQ/IC 10: Resistance of inductive load connected circuits
    - 6.1.9. EQ/IC 03: Resistance to pulse 5b and 5c
    - 6.1.10. EQ/IC 04: Resistance to power supply micro-interruptions
    - 6.1.11. EQ/IC 05: Resistance to starting profile
    - 6.1.12. EQ/IC 06: Resistance to on-board power system voltage ripples
  - 6.2. Immunity to conducted disturbance tests
    - 6.2.1. EQ/IC 07: Immunity to signal line transients

PSA B21 7110

2012-07

- 7.1. Low voltage network (12 V)
  - 7.1.1. EQ/TE 01: Resistance to usual power supply voltages
  - 7.1.2. EQ/TE 08: Resistance to the variations of supply voltage in the usual "volt control" range
  - 7.1.3. EQ/TE 07: Resistance to exceptional supply voltage
  - 7.1.4. EQ/TE 02: Resistance to slow decrease and increase of supply voltages
  - 7.1.5. EQ/TE 03: Re-initialization test
  - 7.1.6. EQ/TE 04: Resistance to unusual power supply voltages
  - 7.1.7. EQ/TE 05: Resistance to grounding and to the positive terminal of the network
  - 7.1.9. EQ/IC 01: Resistance to the pulses 1 and 2a
  - 7.1.10. EQ/IC 10: Resistance to pulses on the outputs switching inductive loads
  - 7.1.11. EQ/IC 02: Resistance to pulses 3a and 3b
  - 7.1.12. EQ/IC 03: Resistance to 5b pulses
  - 7.1.13. EQ/IC 04: Resistance to short interruption of the power supply
  - 7.1.14. EQ/IC 05: Resistance to pulses 4 bis
  - 7.1.15. EQ/IC 12: Resistance to re-start pulse
  - 7.1.16. EQ/IC 13: Resistance to "volt control" voltage pulse
  - 7.1.17. EQ/IC 06: Resistance to voltage ripples
- 7.3. EMC immunity tests (general case)
  - 7.3.1. EQ/IC 07: Immunity to the transients on the signal lines
- 7.4. EMC emission tests (general case)
  - 7.4.1. EQ/MC 01: Measurement of switching noises

2019-04

- 7.1. Electrical resistance tests
  - 7.1.1. EQ/TE 01: Resistance to usual power supply voltages
  - 7.1.2. EQ/TE 08: Resistance to the variations of supply voltage in the usual "volt control" range
  - 7.1.3. EQ/TE 07: Resistance to exceptional supply voltage
  - 7.1.4. EQ/TE 02: Resistance to slow decrease and increase of supply voltages
  - 7.1.5. EQ/TE 03: Re-initialization test
  - 7.1.6. EQ/TE 04: Resistance to unusual power supply voltages
  - 7.1.7. EQ/TE 05: Resistance to ground and to the positive supply voltage short circuit
  - 7.1.9. EQ/IC 01: Resistance to the pulses 1 and 2a
  - 7.1.10. EQ/IC 10: Resistance to pulses on the inputs/outputs connected to ground through their loads
  - 7.1.11. EQ/IC 02: Resistance to pulses 3a and 3b
  - 7.1.12. EQ/IC 03: Resistance to load dump
  - 7.1.13. EQ/IC 04: Resistance to short interruption of the power supply and/or ground
  - 7.1.14. EQ/IC 05: Resistance to pulses 4 bis
  - 7.1.15. EQ/IC 12: Resistance to re-start pulse
  - 7.1.16. EQ/IC 13: Resistance to "volt control" voltage pulse
  - 7.1.17. EQ/IC 06: Resistance to voltage ripples
- 7.2. EMC immunity tests
  - 7.2.1. EQ/IC 07: Immunity to the transients on the signal lines
  - 7.2.3. EQ/IC 14: Immunity to transients with wire to wire coupling
- 7.3. EMC emission tests (general case)
  - 7.3.1. EQ/MC 01: Measurement of switching noises

RNDS-C-00517

2018-06

9.1. Resistance to electrical disturbances tests

9.2. Resistance to electrical disturbances tests

2022-10

9.1. Resistance to electrical disturbances tests

9.2. Resistance to electrical disturbances tests

Renault 36-00-808

2012-07

6.1. Resistance to electrical disturbances tests

6.1.1. EQ/TE 01: Resistance to power supply voltages

6.1.2. EQ/TE 02: Resistance to slow decrease and increase of supply voltages

6.1.3. EQ/TE 03: Re-initialization test

6.1.4. EQ/TE 04: Resistance to non usual power supply voltages

6.1.5. EQ/TE 05: Resistance to ground and positive supply voltages short circuit

6.1.6. EQ/IC 01: Resistance to pulses 1, 1 bis and 2a

6.1.7. EQ/IC 02: Resistance to pulses 3a and 3b

6.1.8. EQ/IC 10: Resistance of inductive load connected circuits

6.1.9. EQ/IC 03: Resistance to pulse 5b

6.1.10. EQ/IC 04: Resistance to power supply micro-interruptions

6.1.11. EQ/IC 05: Resistance to starting profile

6.1.12. EQ/IC 06: Resistance to on-board power system voltage ripples

6.2. Immunity to conducted disturbance tests

6.2.1. EQ/IC 07: Immunity to signal line transients

2016-03

6.1. Resistance to electrical disturbances tests

6.1.1. EQ/TE 01: Resistance to power supply voltages

6.1.2. EQ/TE 02: Resistance to slow decrease and increase of supply voltages

6.1.3. EQ/TE 03: Re-initialization test

6.1.4. EQ/TE 04: Resistance to non usual power supply voltages

6.1.5. EQ/TE 05: Resistance to ground and postitive supply voltage short circuit

6.1.6. EQ/IC 01: Resistance to pulses 1, 1 bis, 2a and 2b

6.1.7. EQ/IC 02: Resistance to pulses 3a and 3b

6.1.8. EQ/IC 10: Resistance of inductive load connected circuits

6.1.9. EQ/IC 03: Resistance to pulse 5b and 5c

6.1.10. EQ/IC 04: Resistance to power supply micro-interruptions

6.1.11. EQ/IC 05: Resistance to starting profile

6.1.12. EQ/IC 06: Resistance to on-board power system voltage ripples

6.2. Immunity to conducted disturbance tests

6.2.1. EQ/IC 07: Immunity to signal line transients

SAE j1113-11

2012-01

Nominal 12 V system

Nominal 24 V system

2017-06
Nominal 12 V system
Nominal 24 V system
2018-12
Nominal 12 V system
Nominal 24 V system

VW TL 81000
2016-02
3.4.4 Pulse interference on supply cables
3.4.4.1 Interference immunity verification test
3.4.4.2 Interference emission measurement
3.4.5 Pulse interference on sensor cables
3.4.5.1 Capacitive coupling clamp (CCC)
3.4.5.2 Current injection probe (BCI probe)
2018-03
5.4.4 Pulse interference on supply cables
5.4.4.1 Interference immunity verification test
5.4.4.2 Interference emission measurement
5.4.5 Pulse interference on sensor cables
5.4.5.1 Capacitive coupling clamp (CCC)
5.4.5.2 Current injection probe (BCI probe)
2021-09
5.4.3 Pulse interference on supply cables
5.4.4 Pulse interference on sensor cables
2024-06
5.4.3 Pulse interference on supply cables
5.4.4 Pulse interference on sensor cables

Volvo 31850329
2014-06
11. Transient Emission and Immunity Requirement
11.2.1 CE01 Transient Emission
11.2.2. CI01 Transientimmunity on Power Lines
11.2.3. CI02 Transientimmunity on Signal Lines