

DIN EN ISO 15118-5:2019-08 (E)

Road vehicles - Vehicle to grid communication interface - Part 5: Physical layer and data link layer conformance test (ISO 15118-5:2018); English version EN ISO 15118-5:2019, only on CD-ROM

| Contents | Page |
|---|-------------|
| Foreword..... | vii |
| Introduction..... | viii |
| 1 Scope | 1 |
| 2 Normative references | 2 |
| 3 Terms and definitions..... | 2 |
| 4 Symbols (and abbreviated terms) | 7 |
| 5 Conventions | 8 |
| 5.1 Requirement structure..... | 8 |
| 5.2 Test system description | 8 |
| 6 Test architecture reference model..... | 8 |
| 6.1 General information | 8 |
| 6.2 Platform adapter interface..... | 9 |
| 6.3 SUT adapter interfaces | 9 |
| 6.4 Codex | 10 |
| 7 Test suite conventions | 10 |
| 7.1 General information | 10 |
| 7.2 Test suite structure (TSS)..... | 10 |
| 7.3 Test profiles..... | 12 |
| 7.3.1 Test configurations | 12 |
| 7.3.2 Components and ports..... | 13 |
| 7.3.3 Protocol implementation conformance statement (PICS) definition..... | 14 |
| 7.3.4 Protocol implementation extra information for testing (PIXIT) definition..... | 15 |
| 7.3.5 Test control..... | 17 |
| Table 12 — SECC AC PICS/PIXIT configuration..... | 17 |
| Table 13 — SECC DC PICS/PIXIT configuration..... | 18 |
| Table 14 — EVCC AC PICS/PIXIT configuration | 19 |
| Table 15 — EVCC DC PICS/PIXIT configuration | 20 |
| 7.4 Test suite identifiers..... | 22 |
| 7.4.1 Module identifiers | 22 |
| 7.4.2 Test case identifiers..... | 22 |
| 7.4.3 Template identifiers..... | 24 |
| 7.4.4 Function identifiers | 25 |
| 7.4.5 Timer identifiers..... | 26 |
| 7.4.6 PICS/PIXIT identifiers..... | 26 |
| 7.4.7 Verdict identifiers | 27 |
| 7.5 Test suite coverage | 27 |
| Table 29 — ATS coverage of requirements in ISO 15118-3 | 28 |
| Table 30 — Groups for a simplified TC Id representation (see Table 29) | 46 |
| 7.6 Test case description..... | 56 |
| 7.7 Test case specification | 57 |

| | | |
|---------|---|-----|
| 7.7.1 | Data types | 57 |
| 7.7.2 | Templates | 57 |
| 7.7.3 | Timeouts and timers | 58 |
| 7.7.4 | Library functions | 58 |
| 7.7.5 | Test case modelling | 58 |
| 7.7.6 | SLAC Message handling for different SUT types..... | 59 |
| 7.7.7 | IEC 61851-1 PWM event handling and control..... | 59 |
| 7.7.8 | Data link status control functionality | 61 |
| 7.7.9 | EIM status control functionality | 61 |
| 7.7.10 | Transmission power limitation functionality..... | 61 |
| 7.7.11 | Attenuator injection functionality | 61 |
| 8 | Test case descriptions for ISO 15118-3 HPGP PLC signal measurement..... | 62 |
| 8.1 | General information..... | 62 |
| 8.2 | Test case for PLC signal measurement for ISO 15118-3 | 62 |
| 8.3 | SECC + PLC bridge test cases | 62 |
| 8.3.1 | SECC test cases for CmSlacParm..... | 62 |
| 8.3.2 | SECC test cases for AttenuationCharacterization | 69 |
| 8.3.3 | SECC test cases for CmValidate..... | 79 |
| 8.3.4 | SECC test cases for CmSlacMatch | 86 |
| 8.3.5 | SECC test cases for PLCLinkStatus..... | 98 |
| 8.3.6 | SECC test cases for CmAmpMap..... | 110 |
| 8.4 | EVCC + PLC bridge test cases | 114 |
| 8.4.1 | EVCC test cases for CmSlacParm | 114 |
| 8.4.2 | EVCC test cases for AttenuationCharacterization..... | 122 |
| 8.4.3 | EVCC test cases for CmValidate | 130 |
| 8.4.4 | EVCC test cases for CmValidateOrCmSlacMatch..... | 142 |
| 8.4.5 | EVCC test cases for CmSlacMatch..... | 142 |
| 8.4.6 | EVCC test cases for PLCLinkStatus | 148 |
| 8.4.7 | EVCC test cases for CmAmpMap | 159 |
| Annex A | (normative) Configuration specifications..... | 164 |
| A.1 | Timer configuration | 164 |
| A.2 | PICS configuration | 165 |
| A.3 | PIXIT configuration | 165 |
| Annex B | (normative) Control part specification..... | 167 |
| B.1 | SECC control parts..... | 167 |
| B.1.1 | AC specific control parts | 167 |
| B.1.2 | DC specific control parts..... | 172 |
| B.2 | EVCC control parts | 177 |
| B.2.1 | AC specific control parts | 177 |
| B.2.2 | DC specific control parts..... | 181 |
| Annex C | (normative) Test-case specifications for 15118-3 | 186 |
| C.1 | SECC + PLC bridge test cases | 186 |
| C.1.1 | SECC test cases for CmSlacParm..... | 186 |
| C.1.2 | SECC test cases for AttenuationCharacterization | 190 |
| C.1.3 | SECC test cases for CmValidate..... | 197 |

| | | |
|---|---|------------|
| C.1.4 | SECC test cases for CmSlacMatch | 202 |
| C.1.5 | SECC test cases for PLCLinkStatus..... | 209 |
| C.1.6 | SECC test cases for CmAmpMap..... | 212 |
| C.2 | EVCC + PLC bridge test cases | 214 |
| C.2.1 | EVCC test cases for CmSlacParm..... | 214 |
| C.2.2 | EVCC test cases for AttenuationCharacterization | 219 |
| C.2.3 | EVCC test cases for CmValidate..... | 224 |
| C.2.4 | EVCC test cases for CmValidateOrCmSlacMatch | 232 |
| C.2.5 | EVCC test cases for CmSlacMatch | 232 |
| C.2.6 | EVCC test cases for PLCLinkStatus..... | 236 |
| C.2.7 | EVCC test cases for CmAmpMap | 244 |
| Annex D (normative) Function specifications for supporting test execution..... | | 248 |
| D.1 | Configuration functions..... | 248 |
| D.2 | Pre-condition functions..... | 250 |
| D.2.1 | SECC + PLC bridge functions | 250 |
| D.2.2 | EVCC + PLC bridge functions..... | 253 |
| D.3 | Post-condition functions..... | 256 |
| D.3.1 | SECC + PLC bridge functions | 256 |
| D.3.2 | EVCC + PLC bridge functions..... | 257 |
| D.4 | Library functions | 257 |
| Annex E (normative) Function specifications for 15118-3..... | | 259 |
| E.1 | SECC + PLC bridge functions | 259 |
| E.1.1 | SECC functions for CmSlacParm | 259 |
| E.1.2 | SECC functions for AttenuationCharacterization | 266 |
| E.1.3 | SECC functions for CmValidate..... | 281 |
| E.1.4 | SECC functions for CmSlacMatch | 298 |
| E.1.5 | SECC functions for CmSetKey..... | 303 |
| E.1.6 | SECC functions for PLCLinkStatus..... | 304 |
| E.1.7 | SECC functions for CmAmpMap | 313 |
| E.2 | EVCC + PLC bridge functions..... | 318 |
| E.2.1 | EVCC functions for CmSlacParm..... | 319 |
| E.2.2 | EVCC functions for AttenuationCharacterization..... | 324 |
| E.2.3 | EVCC functions for CmValidate | 346 |
| E.2.4 | EVCC functions for CmValidateOrCmSlacMatch | 367 |
| E.2.5 | EVCC functions for CmSlacMatch..... | 370 |
| E.2.6 | EVCC functions for CmSetKey | 373 |
| E.2.7 | EVCC functions for PLCLinkStatus | 373 |
| E.2.8 | EVCC functions for CmAmpMap..... | 379 |

| | |
|--|------------|
| Annex F (normative) Template specifications for 15118-3 | 385 |
| F.1 Common + PLC bridge templates | 385 |
| F.1.1 CMN templates for CmSlacParm | 386 |
| F.1.2 CMN templates for CmStartAttenCharInd | 387 |
| F.1.3 CMN templates for CmMnbcSoundInd | 387 |
| F.1.4 CMN templates for CmAttenCharRsp | 387 |
| F.1.5 CMN templates for CmValidate | 388 |
| F.1.6 CMN templates for CmSlacMatch | 389 |
| F.1.7 CMN templates for CmSetKey | 390 |
| F.1.8 CMN templates for CmAmpMap | 391 |
| F.1.9 CMN templates for CmNwStats | 394 |
| F.2 SECC + PLC bridge templates | 394 |
| F.2.1 SECC templates for CmAttenCharInd | 395 |
| F.3 EVCC + PLC bridge templates | 395 |
| F.3.1 EVCC templates for CmAttenProfileInd | 395 |
| F.3.2 EVCC templates for CmAttenCharInd | 395 |
| Annex G (normative) Data type definitions | 397 |
| G.1 Data types for PICS | 397 |
| G.2 Data types for PIXIT | 397 |
| G.3 Data types for SLAC | 398 |
| Bibliography | 403 |