ISO 20794-5:2020 (E)

Road vehicles — Clock extension peripheral interface (CXPI) — Part 5: Application layer conformance test plan

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Symbols and abbreviated terms

4.1 Symbols
4.2 Abbreviated terms

5 Conventions

6 General test specification considerations

6.1 General
6.2 Test conditions
6.3 IUT requirements
6.4 CTC definition
6.5 Test system set-up
6.6 Configuration of test system and IUT
6.6.1 General
6.6.2 IUT-specific set-up parameters
6.6.3 User_Specific configurations
6.6.4 W/S_Init configurations
6.6.5 W/S_Passive configurations
6.6.6 W/S_RdySleep configurations
6.6.7 W/S_NotRdySleep configurations
6.6.8 A_WSSup configurations
6.6.9 NonW/S configurations
6.6.10 ErrDet configurations
6.6.11 Event configurations
6.6.12 Polling configurations
6.7 SUT initialisation
6.7.1 General
6.7.2 Default initialisation
6.7.3 Sleep initialisation
6.7.4 Power-off initialisation
6.7.5 Transmission prohibition initialisation
6.7.6 Clock supply of secondary clock master initialisation

7 Application conformance test plan

7.1 General
7.2 Network management
7.2.1 General
7.2.2 State transition definition
7.2.3 State transition CTCs
7.2.3.1 8.CTC_1.1 – State machine – Master node – Wake-up/Sleep supported
7.2.3.2 8.CTC_1.2 – State machine – Master node – Wake-up/Sleep not supported
7.2.3.3 8.CTC_1.3 – State machine – Slave node – Wake-up/Sleep supported
7.2.3.4 8.CTC_1.4 – State machine – Slave node – Sleep permission

7.2.3.5 8.CTC_1.5 – State machine – Slave node – Sleep prohibition
7.2.3.6 8.CTC_1.6 – State machine – Slave node – Transition into the normal state
7.2.4 Wake-up request/notification of master node trigger CTCs
7.2.4.1 8.CTC_2.1 – Master node wake-up sequence – Master node trigger
7.2.4.2 8.CTC_2.2 – Slave node wake-up sequence – Master node trigger
7.2.4.3 8.CTC_2.3 – Master node wakeup_ind value verification, master node trigger
7.2.4.4 8.CTC_2.4 – Slave node wakeup_ind value verification, master node trigger
7.2.5 Wake-up request/notification of slave node trigger CTCs
7.2.5.1 8.CTC_3.1 – Slave node wake-up request – Slave node trigger
7.2.5.2 8.CTC_3.2 – Slave node wake-up pulse retransmission sequence – Slave node trigger
7.2.5.3 8.CTC_3.3 – Slave node wake-up notification – Slave node trigger
7.2.5.4 8.CTC_3.4 – Master node wake-up sequence – Slave node trigger
7.2.5.5 8.CTC_3.5 – Slave node wake-up sequence – Dominant pulse
7.2.5.6 8.CTC_3.6 – Master node wakeup_ind value verification, slave node trigger
7.2.5.7 8.CTC_3.7 – Slave node wakeup_ind value verification, slave node trigger
7.2.5.8 8.CTC_3.8 – Slave node wakeup_ind value verification upon wake-up pulse transmission
7.2.6 Sleep request/notification CTCs
7.2.6.1 8.CTC_4.1 – Master node sleep_ind verification
7.2.6.2 8.CTC_4.2 – Slave node sleep_ind verification
7.2.6.3 8.CTC_4.3 – Sleep message reception
7.2.6.4 8.CTC_4.4 – Sleep message transmission
7.2.6.5 8.CTC_4.5 – Abort sleep message transmission by losing arbitration 1
7.2.6.6 8.CTC_4.6 – Abort sleep message transmission by losing arbitration 2
7.2.6.7 8.CTC_4.7 – Abort sleep message transmission by transmission error
7.2.7 Network Management multi clock master processing CTCs
7.2.7.1 8.CTC_5.1 – Multi clock master sequence – Wake-up/Sleep supported
7.2.7.2 8.CTC_5.2 – Multi clock master sequence – Wake-up/Sleep not supported
7.2.7.3 8.CTC_5.3 – Clock supply stop of secondary clock master 1
7.2.7.4 8.CTC_5.4 – Clock supply stop of secondary clock master 2
7.3 Fault management
7.3.1 Error detection/recovery CTCs
7.3.1.1 8.CTC_6.1 – Transmission prohibition 1 as master
7.3.1.2 8.CTC_6.2 – Transmission prohibition 1 as slave
7.3.1.3 8.CTC_6.3 – Transmission prohibition 2 as master
7.3.1.4 8.CTC_6.4 – Transmission prohibition 2 as slave
7.3.1.5 8.CTC_6.5 – Master node recovery from transmission prohibition by system reset
7.3.1.6 8.CTC_6.6 – Master node recovery from transmission prohibition by sleep/wake-up
7.3.1.7 8.CTC_6.7 – Slave node recovery from transmission prohibition by sleep/wake-up
7.3.1.8 8.CTC_6.8 – Slave node recovery from transmission prohibition by system reset
7.3.1.9 8.CTC_6.9 – Recovery from transmission prohibition by normal reception
7.3.2 CXPI network error CTCs
7.3.2.1 8.CTC_7.1 – CXPI network error handling – Wake-up/Sleep supported
7.3.2.2 8.CTC_7.2 – CXPI network error handling
7.3.3 SCT error CTCs
7.3.3.1 8.CTC_8.1 – Outbreak of the count error and recovery from SCT error
7.3.4 Error notification between CXPI nodes CTCs
7.3.4.1 8.CTC_9.1 – Supported error types for error notification between CXPI nodes

8 Application layer conformance test plan

8.1 General
8.2 Transfer management CTCs
8.2.1 General
8.2.2 7.CTC_10.1 – Master node event-triggered method
8.2.3 7.CTC_10.2 – Slave node event-triggered method
8.2.4 7.CTC_10.3 – Master node polling method
8.2.5 7.CTC_10.4 – Slave node polling method
8.2.6 7.CTC_10.5 – Behaviour of unknown or invalid ReqId reception
8.2.7 7.CTC_10.6 – Master node sets unused bits in response message
8.2.8 7.CTC_10.7 – Slave node sets unused bits in response message

Page count: 51