

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	Default configurations
6.6.4	L_ErrDet1 configurations
6.6.5	L_ErrDet2 configurations
6.6.6	L_Arbit configurations
6.6.7	L_Unknown configurations
6.7	SUT initialisation
6.8	Additional test system set-up capabilities
6.8.1	CXPI network data generator
6.8.2	TXD data generator
6.8.3	TXPWM data generator
6.8.4	RXPWM data generator
6.8.5	Other requirements
7	Data link layer conformance test plan
7.1	General
7.2	CTP – Timing parameters
7.2.1	2.CTC_1.1 – IBS length
7.2.2	2.CTC_1.2 – IFS length
7.2.3	2.CTC_1.3 – Frame reception starting condition 1 without the error bit
7.2.4	2.CTC_1.4 – Frame reception starting condition 1 with the error bit
7.2.5	2.CTC_1.5 – Frame reception starting condition 2 without the error bit
7.2.6	2.CTC_1.6 – Frame reception starting condition 2 with the error bit
7.2.7	2.CTC_1.7 – Frame reception starting condition 3
7.2.8	2.CTC_1.8 – Maximum length of the frame
7.3	CTP – Frame transmission/reception
7.3.1	2.CTC_2.1 – Response to L_PID field
7.3.2	2.CTC_2.2 – L_PID field transmission
7.3.3	2.CTC_2.3 – L_PTYPE field transmission

- 7.3.4 2.CTC_2.4 – L_PTYPE field response function
- 7.3.5 2.CTC_2.5 – L_FI_DLC ≠ 11112 and frame data verification 1
- 7.3.6 2.CTC_2.6 – L_FI_DLC ≠ 11112 and frame data verification 2 if DLC is 11012 or 11102 (Ftype = NormalCom)
- 7.3.7 2.CTC_2.7 – L_FI_DLC = 11112/L_FI_DLCext ≥ 0 and frame data verification
- 7.3.8 2.CTC_2.8 – Given CRC of frame with L_FI_DLC ≠ 11112
- 7.3.9 2.CTC_2.9 – Given CRC of frame with L_FI_DLC = 11112/L_FI_DLCext ≥ 0
- 7.3.10 2.CTC_2.10 – Frame transmission completion
- 7.3.11 2.CTC_2.11 – Frame reception completion
- 7.4 CTP – Network access
- 7.4.1 2.CTC_3.1 – Arbitration function 1 (arbitration by using carrier sense)
- 7.4.2 2.CTC_3.2 – Arbitration function 2 (IUT loses arbitration and transitions into receiving state)
- 7.5 CTP – Error detection
- 7.5.1 2.CTC_4.1 – Byte error
- 7.5.2 2.CTC_4.2 – CRC error
- 7.5.3 2.CTC_4.3 – Parity error of the L_PID field without the error bit
- 7.5.4 2.CTC_4.4 – Parity error of the L_PID field with the error bit
- 7.5.5 2.CTC_4.5 – Parity error of the L_PTYPE field without the error bit
- 7.5.6 2.CTC_4.6 – Parity error of the L_PTYPE field with the error bit
- 7.5.7 2.CTC_4.7 – Data length code error with L_FI_DLC ≠ 11112
- 7.5.8 2.CTC_4.8 – Data length error with L_FI_DLC = 11112/L_FI_DLCext ≥ 0
- 7.5.9 2.CTC_4.9 – Data length code error L_FI_DLC ≠ 11112 and if DLC is 11012 or 11102 (Ftype = DiagNodeCfg)
- 7.5.10 2.CTC_4.10 – Data length code error L_FI_DLC = 11112/L_FI_DLCext ≤ 12 (Ftype = DiagNodeCfg)
- 7.5.11 2.CTC_4.11 – Framing error in receiving node
- 7.5.12 2.CTC_4.12 – Framing error in transmitting node
- 7.5.13 2.CTC_4.13 – Ignore error (no support of L_FI_DLC = 11112)
- 8 Physical layer conformance test plan (PMA – PS separate type)
 - 8.1 CTP – Operational conditions and calibration
 - 8.1.1 Initial configuration
 - 8.1.2 1.CTC_1.1 – Clock transmission 1
 - 8.1.3 1.CTC_1.2 – Clock transmission 2
 - 8.1.4 1.CTC_1.3 – Clock transmission 3
 - 8.1.5 1.CTC_1.4 – Detection of clock existence
 - 8.1.6 1.CTC_1.5 – Arbitration function (stop transmission by arbitration)
 - 8.1.7 1.CTC_1.6 – Operating voltage range
 - 8.1.8 1.CTC_1.7 – Bit synchronisation
 - 8.2 CTP – Wake-up pulse
 - 8.2.1 General
 - 8.2.2 1.CTC_2.1 – Wake-up pulse reception 1, IUT as master node
 - 8.2.3 1.CTC_2.2 – Wake-up pulse reception 2, IUT as slave node
 - 8.2.4 1.CTC_2.3 – Wake-up pulse transmission
 - 8.3 CTP – Voltage and duty cycle thresholds
 - 8.3.1 General
 - 8.3.2 Voltage threshold test set-up
 - 8.3.3 1.CTC_3.1 – Voltage threshold test 1
 - 8.3.4 1.CTC_3.2 – Voltage threshold (VDom_TS up) test 2
 - 8.3.5 1.CTC_3.2 – Voltage threshold test 2
 - 8.3.6 1.CTC_3.3 – Duty cycle threshold test 1
 - 8.3.7 1.CTC_3.4 – Duty cycle threshold test 2
 - 8.4 CTP – Network state current characteristics
 - 8.4.1 1.CTC_4.1 – Drive current test
 - 8.4.2 1.CTC_4.2 – Input leakage test
 - 8.4.3 1.CTC_4.3 – Reverse leakage current test
 - 8.5 CTP – Physical signal slope control
 - 8.5.1 1.CTC_5.1 – Duty cycle measurement 1
 - 8.5.2 1.CTC_5.2 – Duty cycle measurement 2
 - 8.5.3 1.CTC_5.3 – Duty cycle measurement 3
 - 8.5.4 1.CTC_5.4 – Propagation delay of the receiver test
 - 8.5.5 1.CTC_5.5 – Propagation delay of the transmitter test
 - 8.5.6 1.CTC_5.6 – Propagation delay of the transmitter test 2

- 8.5.7 1.CTC_5.7 – Loop back time test
 - 8.6 CTP – GND/VBAT shift test
 - 8.6.1 GND/VBAT shift test set-up
 - 8.6.2 1.CTC_6.1 – GND shift test
 - 8.6.3 1.CTC_6.2 – VBAT shift test
 - 8.7 CTP – Loss of power supply
 - 8.7.1 Loss of battery and Loss of GND test set-up
 - 8.7.2 1.CTC_7.1 – Loss of battery test (VBAT)
 - 8.7.3 1.CTC_7.2 – Loss of GND test
 - 8.8 CTP – Internal static capacity
 - 8.8.1 Internal static capacity test set-up
 - 8.8.2 1.CTC_8.1 Internal static capacity
 - 8.9 CTP – Internal resistance measurement during operation
 - 8.9.1 Internal resistor measurement test set-up
 - 8.9.2 1.CTC_9.1– Internal resistor measurement 1
 - 8.9.3 1.CTC_9.2– Internal resistor measurement 2
- 9 Physical layer conformance test plan (PS –PMA non-separate type)
- 9.1 CTP – Operational conditions and calibration
 - 9.1.1 1.CTC_10.1 – Clock transmission
 - 9.1.2 1.CTC_10.2 – Detection of clock existence
 - 9.1.3 1.CTC_10.3 – Arbitration function (stop transmission by arbitration)
 - 9.1.4 1.CTC_10.4 – Operating voltage range
 - 9.2 CTP – Wake-up pulse
 - 9.2.1 General
 - 9.2.2 1.CTC_11.1 – Wake-up pulse reception, IUT as master node
 - 9.2.3 1.CTC_11.2 – Wake-up by clock detection
 - 9.2.4 1.CTC_11.3 – Wake-up pulse transmission
 - 9.3 CTP – Voltage and duty cycle thresholds
 - 9.3.1 General
 - 9.3.2 1.CTC_12.1 – Voltage threshold test 1
 - 9.3.3 1.CTC_12.2 – Voltage threshold test 2
 - 9.3.4 1.CTC_12.3 – Duty cycle threshold test 1
 - 9.3.5 1.CTC_12.4 – Duty cycle threshold test 2
 - 9.4 CTP – Network state current characteristics
 - 9.4.1 1.CTC_13.1 – Drive current test
 - 9.4.2 1.CTC_13.2 – Input leakage test
 - 9.4.3 1.CTC_13.3 – Reverse leakage current test
 - 9.5 CTP – Physical signal slope control
 - 9.5.1 1.CTC_14.1 – Duty cycle measurement 1
 - 9.5.2 1.CTC_14.2 – Duty cycle measurement 2
 - 9.6 CTP – GND/VBAT shift test
 - 9.6.1 GND/VBAT shift test set-up
 - 9.6.2 1.CTC_15.1 – GND shift test
 - 9.6.3 1.CTC_15.2 – VBAT shift test
 - 9.7 CTP – Loss of power supply
 - 9.7.1 General
 - 9.7.2 Loss of battery (VBAT) and GND test set-up
 - 9.7.3 1.CTC_16.1 – Loss of battery test (VBAT)
 - 9.7.4 1.CTC_16.2 – Loss of GND test
 - 9.8 CTP – Internal static capacity
 - 9.8.1 Internal static capacity test set-up
 - 9.8.2 1.CTC_17.1 Internal static capacity
 - 9.9 CTP – Internal resistance measurement during operation
 - 9.9.1 Internal resistor measurement test set-up
 - 9.9.2 1.CTC_18.1– Internal resistor measurement 1
 - 9.9.3 1.CTC_18.2– Internal resistor measurement 2