ATTEST™

Conformance Test Suite
White Rabbit Precision Time Protocol Version 1.1

Test Cases - Overview

Part Number: T / TC WRPTP 0419/1.5

Introduction

The ATTEST^{TM} White Rabbit Precision Time Protocol Conformance test suite consists of following test groups:

S. No.	Group	Test cases
1	Message Format Group (MFG)	6
2	WRPTP State Machine Group (WSMG)	35
3	WRPTP Configuration Group (WCG)	6
4	Inter-operability Group (IOG)	2
	Total	**49**

Following is the list of ATTEST-CTS WRPTP test cases

S. No.	Title	Purpose	Reference	ID	Type
1	Working of WR Master with non-WR device	To verify that a WRPTP enabled device in WR_MASTER mode moves to standard PTP Master mode when it is connected to non-WR device.	White Rabbit Specification v2.0 July 2011, Clause 6.1 Page 13, Figure 28 Page 63	IOG_001	MUST
2	Working of WR Slave with non-WR device	To verify that a WRPTP enabled device in WR_SLAVE mode moves to standard PTP Slave mode when it is connected to non-WR device.	White Rabbit Specification v2.0 July 2011, Clause 6.1 Page 13, Figure 28 Page 63	IOG_002	MUST
3	WRPTP Announce message - transport is over IEEE 802.3/ Ethernet	To verify that a WRPTP enabled device sends WRPTP Announce message in correct format when transport is over IEEE 802.3/Ethernet.	White Rabbit Specification v2.0 July 2011, Clause 6.5.2 Pages 27 and 28	MFG_001	MUST
4	WRPTP Signaling message – WR Master - transport is over IEEE 802.3/Ethernet	To verify that a WRPTP enabled device sends WRPTP Signaling messages (LOCK, CALIBRATE, CALIBRATED and WR_MODE_ON) in correct format when its port is WR Master and transport is over IEEE 802.3/Ethernet.	White Rabbit Specification v2.0 July 2011, Clause 6.5.3 Pages 28 and 29	MFG_002	MUST
5	WRPTP Signaling message - WR Slave - transport is over IEEE 802.3/Ethernet	To verify that a WRPTP enabled device sends WRPTP Signaling messages (SLAVE_PRESENT, LOCKED, CALIBRATE and CALIBRATED) in correct format when its port is WR Slave and transport is over IEEE 802.3/Ethernet.	White Rabbit Specification v2.0 July 2011, Clause 6.5.3 Pages 28 and 29	MFG_003	MUST
6	WRPTP Announce message - transport is over IPv4/UDP	To verify that a WRPTP enabled device sends WRPTP Announce message in correct format when transport is over IPv4/UDP.	White Rabbit Specification v2.0 July 2011, Clause 6.5.2 Pages 27 and 28	MFG_004	MUST
7	WRPTP Signaling message – WR Master - transport is over IPv4/UDP	To verify that a WRPTP enabled device sends WRPTP Signaling messages (LOCK, CALIBRATE, CALIBRATED and WR_MODE_ON) in correct format when its port is WR Master and transport is over IPv4/UDP.	White Rabbit Specification v2.0 July 2011, Clause 6.5.3 Pages 28 and 29	MFG_005	MUST

S. No.	Title	Purpose	Reference	ID	Type
8	WRPTP Signaling message - WR Slave - transport is over IPv4/UDP.	To verify that a WRPTP enabled device sends WRPTP Signaling messages (SLAVE_PRESENT, LOCKED, CALIBRATE and CALIBRATED) in correct format when its port is WR Slave and transport is over IPv4/UDP.	White Rabbit Specification v2.0 July 2011, Clause 6.5.3 Pages 28 and 29	MFG_006	MUST
9	Default initialization values for WRPTP attributes	To verify that a WRPTP enabled device stores all attributes with default initialization values. Checking that the following attributes have correct default values. 1) defaultDS.domainNumber = 0 2) defaultDS.priority1 = 64 3) defaultDS.priority2 = 128 4) portDS.logSyncInterval = 0 5) portDS.knownDeltaTx = Default value 6) portDS.knownDeltaRx = Default value 7) portDS.wrConfig = WR_M_AND_S 8) portDS.calPeriod = 3000us 9) portDS.calRetry = 0 10) WR_PRESENT_TIMEOUT = 1000ms 11) WR_M_LOCK_TIMEOUT = 15000ms 12) WR_LOCKED_TIMEOUT = 300ms 13) WR_RESP_CALIB_REQ_TIMEOUT = 3ms 14) WR_CALIBRATED_TIMEOUT = 300ms 15) WR_STATE_RETRY = 3 Note: The default values of these attributes can be changed through ATTEST GUI (Go to Configuration Manager and select desired configuration, go to Protocol Options > WRPTP > WRPTP Attributes).	White Rabbit Specification v2.0 July 2011, Clause 6.3 Page 16	WCG_001	MUST
10	wrConfig	To verify that a WRPTP enabled device supports to configure wrConfig data set member (allowable values: WR_S_ONLY, WR_M_ONLY and WR_M_AND_S).	White Rabbit Specification v2.0 July 2011, Clause 6.3 Page 16	WCG_002	MUST
11	knownDeltaTx in WR Master	To verify that a WRPTP enabled device with it's port in PTP Master sends CALIBRATED message with configured knownDeltaTx (allowed range: UInteger64).	White Rabbit Specification v2.0 July 2011, Clause 6.3 Page 16	WCG_003	MUST

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12	knownDeltaTx in WR Slave	To verify that a WRPTP enabled device with it's port in PTP Slave sends CALIBRATED message with configured knownDeltaTx (allowed range: UInteger64).	White Rabbit Specification v2.0 July 2011, Clause 6.3 Page 16	WCG_004	MUST
13	knownDeltaRx in WR Master	To verify that a WRPTP enabled device with it's port in PTP Master sends CALIBRATED message with configured knownDeltaRx (allowed range: UInteger64).	White Rabbit Specification v2.0 July 2011, Clause 6.3 Page 16	WCG_005	MUST
14	knownDeltaRx in WR Slave	To verify that a WRPTP enabled device with it's port in PTP Slave sends CALIBRATED message with configured knownDeltaRx (allowed range: UInteger64).	White Rabbit Specification v2.0 July 2011, Clause 6.3 Page 16	WCG_006	MUST
15	WRPTP portState - IDLE	To verify that port of a WRPTP enabled device shall be in the IDLE state when WR Link Setup is not being performed.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Figure 27 Page 62	WSMG_001	MUST
16	WR Master transition of WRPTP portState from IDLE to M_LOCK	To verify that a WRPTP enabled device with it's port in PTP Master sends LOCK message and transitions it's port WR state from IDLE to M_LOCK state upon receiving SLAVE_PRESENT message.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Figure 27 Page 62	WSMG_002	MUST
17	WR Master re-entering of WRPTP portState - M_LOCK - on expiry of WR_M_LOCK_TIMEOUT	To verify that a WRPTP enabled device with it's port in PTP Master sends LOCK message and re-enters to it's port WR state M_LOCK on expiry of WR_M_LOCK_TIMEOUT.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Figure 27 Page 62	WSMG_003	MUST

S. No.	Title	Purpose	Reference	ID	Type
18	WR Master transition of WRPTP portState from M_LOCK to CALIBRATION before EXC_TIMEOUT_RETRY occurs	To verify that a WRPTP enabled device with it's port in PTP Master sends CALIBRATE message and transitions it's port state from M_LOCK to CALIBRATION state on the reception of LOCKED message before EXC_TIMEOUT_RETRY occurs.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_004	MUST
19	WR Master transition of WRPTP portState from M_LOCK to IDLE after EXC_TIMEOUT_RETRY occurs	To verify that a WRPTP enabled device with its port in PTP Master transitions it's port WR state from M_LOCK to IDLE state after EXC_TIMEOUT_RETRY occurs.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_005	MUST
20	WR Master transition of WRPTP portState from CALIBRATION to CALIBRATED	To verify that a WRPTP enabled device with its port in PTP Master sends CALIBRATED message and transition its port WR state from the CALIBRATION to CALIBRATED state.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Figure 27 Page 62	WSMG_006	MUST
21	WR Master re-entering of WRPTP portState - CALIBRATED - on expiry of WR_CALIBRATED_TIMEOUT.	To verify that a WRPTP enabled device with it's port in PTP Master sends CALIBRATED message and re-enters to it's port WR state CALIBRATED on expiry of WR_CALIBRATED_TIMEOUT.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Figure 27 Page 62	WSMG_007	MUST
22	WR Master transition of WRPTP portState from CALIBRATED to RESP_CALIB_REQ before EXC_TIMEOUT_RETRY occurs	To verify that a WRPTP enabled device with it's port in PTP Master transitions it's port WR state from CALIBRATED to RESP_CALIB_REQ state on the reception of CALIBRATE message before EXC_TIMEOUT_RETRY occurs.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_008	MUST
23	WR Master transition of WRPTP portState from CALIBRATED to IDLE after	To verify that a WRPTP enabled device with it's port in PTP Master transitions it's port WR state from CALIBRATED to IDLE state after EXC_TIMEOUT_RETRY occurs.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_009	MUST

S. No.	Title	Purpose	Reference	ID	Type
	EXC_TIMEOUT_RETRY occurs				
24	WR Master re-entering of WRPTP portState - RESP_CALIB_REQ - on expiry of WR_RESP_CALIB_REQ _TIMEOUT	To verify that a WRPTP enabled device with it's port in PTP Master re-enters to it's port WR state RESP_CALIB_REQ on expiry of WR_RESP_CALIB_REQ_TIMEOUT when otherPortCalPeriod is 0x0.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_010	MUST
25	WR Master re-entering of WRPTP portState - RESP_CALIB_REQ - on expiry of RESP_CALIB_REQ_TIM EOUT - otherPortCalPeriod and otherPortCalRetry > 0x0	To verify that a WRPTP enabled device with it's port in PTP Master re-enters to it's port WR state RESP_CALIB_REQ on expiry of WR_RESP_CALIB_REQ_TIMEOUT when otherPortCalPeriod and otherPortCalRetry are greater than 0x0 (otherPortCalPeriod and otherPortCalRetry should be ignored by DUT).	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_011	MUST
26	WR Master transition of WRPTP portState from RESP_CALIB_REQ to WR_LINK_ON before EXC_TIMEOUT_RETRY occurs - otherPortCalPeriod and otherPortCalRetry are 0x0	To verify that a WRPTP enabled device with it's port in PTP Master sends WR_MODE_ON message and transitions it's port state from RESP_CALIB_REQ to WR_LINK_ON state on the reception of CALIBRATED message before EXC_TIMEOUT_RETRY occurs when otherPortCalPeriod and otherPortCalRetry are 0x0.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_012	MUST
27	WR Master transition of WRPTP portState from RESP_CALIB_REQ to IDLE after EXC_TIMEOUT_RETRY occurs -	To verify that a WRPTP enabled device with it's port in PTP Master transitions it's port WR state from RESP_CALIB_REQ to IDLE state after EXC_TIMEOUT_RETRY occurs when otherPortCalPeriod and otherPortCalRetry are 0x0.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_013	MUST

S. No.	Title	Purpose	Reference	ID	Type
	otherPortCalPeriod and otherPortCalRetry are 0x0				
28	WR Master transition of WRPTP portState from RESP_CALIB_REQ to WR_LINK_ON before EXC_TIMEOUT_RETRY occurs - otherPortCalPeriod and otherPortCalRetry > 0x0	To verify that a WRPTP enabled device with it's port in PTP Master sends WR_MODE_ON message and transitions it's port WR state from RESP_CALIB_REQ to WR_LINK_ON state on the reception of CALIBRATED message before EXC_TIMEOUT_RETRY occurs when otherPortCalPeriod and otherPortCalRetry are greater than 0x0 (otherPortCalPeriod and otherPortCalRetry should be ignored by DUT).	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_014	MUST
29	WR Master transition of WRPTP portState from RESP_CALIB_REQ to IDLE after EXC_TIMEOUT_RETRY occurs - otherPortCalPeriod and otherPortCalRetry > 0x0	To verify that a WRPTP enabled device with it's port in PTP Master transitions it's port WR state from RESP_CALIB_REQ to IDLE state after EXC_TIMEOUT_RETRY occurs when otherPortCalPeriod and otherPortCalRetry are greater than 0x0 (otherPortCalPeriod and otherPortCalRetry should be ignored by DUT).	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_015	MUST
30	WR Master transition of WRPTP portState from WR_LINK_ON to IDLE	To verify that a WRPTP enabled device with it's port in PTP Master transitions it's port WR state from WR_LINK_ON to IDLE state upon successful completion of WR link setup process.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Page 35, Figure 27 Page 62	WSMG_016	MUST
31	Storing of otherPortDeltaTx, otherPortDeltaRx, otherPortCalPeriod, otherPortCalRetry and otherPortCalSendPattern in WR Master	To verify that a WRPTP enabled device with it's port in PTP Master stores otherPortDeltaTx, otherPortDeltaRx, otherPortCalPeriod, otherPortCalRetry and otherPortCalSendPattern received in CALIBRATE message.	White Rabbit Specification v2.0 July 2011, Clause 6.3.1.2.20 - 6.3.1.2.24 Pages 22	WSMG_017	MUST

S. No.	Title	Purpose	Reference	ID	Type
32	WR Slave transition of WRPTP portState from IDLE to PRESENT	To verify that a WRPTP enabled device with it's port in PTP Slave sends SLAVE_PRESENT message and transitions it's port WR state from IDLE to PRESENT state.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Figure 27 Page 62	WSMG_018	MUST
33	WR Slave re-entering of WRPTP portState - PRESENT - on expiry of WR_PRESENT_TIMEOUT	To verify that a WRPTP enabled device with it's port in PTP Slave sends SLAVE_PRESENT message and re-enters to it's port WR state PRESENT on expiry of WR_PRESENT_TIMEOUT.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Figure 27 Page 62	WSMG_019	MUST
34	WR Slave transition of WRPTP portState from PRESENT to IDLE after EXC_TIMEOUT_RETRY occurs	To verify that a WRPTP enabled device with it's port in PTP Slave transitions it's port WR state from PRESENT to IDLE state after EXC_TIMEOUT_RETRY occurs.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_020	MUST
35	WR Slave transition of WRPTP portState from S_LOCK to LOCKED	To verify that a WRPTP enabled device with it's port in PTP Slave sends a LOCKED message and transitions it's port state from S_LOCK to LOCKED state.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Figure 27 Page 62	WSMG_021	MUST
36	WR Slave re-entering of WRPTP portState - LOCKED - on expiry of WR_LOCKED_TIMEOUT	To verify that a WRPTP enabled device with it's port in PTP Slave sends LOCKED message and re-enters to it's port WR state LOCKED on expiry of WR_LOCKED_TIMEOUT.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Figure 27 Page 62	WSMG_022	MUST
37	WR Slave transition of WRPTP portState from LOCKED to RESP_CALIB_REQ before EXC_TIMEOUT_RETRY occurs	To verify that a WRPTP enabled device with it's port in PTP Slave transitions it's port WR state from LOCKED to RESP_CALIB_REQ state on the reception of CALIBRATE message before EXC_TIMEOUT_RETRY occurs.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_023	MUST

S. No.	Title	Purpose	Reference	ID	Type
38	WR Slave transition of WRPTP portState from LOCKED to IDLE after EXC_TIMEOUT_RETRY occurs	To verify that a WRPTP enabled device with it's port in PTP Slave transitions it's port WR state from LOCKED to IDLE state after EXC_TIMEOUT_RETRY occurs.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_024	MUST
39	WR Slave re-entering of WRPTP portState - RESP_CALIB_REQ - on expiry of WR_RESP_CALIB_REQ _TIMEOUT	To verify that a WRPTP enabled device with it's port in PTP Slave re-enters to it's port WR state RESP_CALIB_REQ on expiry of WR_RESP_CALIB_REQ_TIMEOUT when otherPortCalPeriod is 0x0.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_025	MUST
40	WR Slave re-entering of WRPTP portState - RESP_CALIB_REQ - on expiry of WR_RESP_CALIB_REQ _TIMEOUT - otherPortCalPeriod and otherPortCalRetry > 0x0	To verify that a WRPTP enabled device with it's port in PTP Slave re-enters to it's port WR state RESP_CALIB_REQ on expiry of WR_RESP_CALIB_REQ_TIMEOUT when otherPortCalPeriod is greater than 0x0 (otherPortCalPeriod and otherPortCalRetry should be ignored by DUT).	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_026	MUST
41	WR Slave transition of WRPTP portState from RESP_CALIB_REQ to CALIBRATION before EXC_TIMEOUT_RETRY	To verify that a WRPTP enabled device with it's port in PTP Slave sends CALIBRATE message and transitions it's port WR state from RESP_CALIB_REQ to CALIBRATION state on the reception of CALIBRATED message before	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_027	MUST

S. No.	Title	Purpose	Reference	ID	Type
	occurs - otherPortCalPeriod and otherPortCalRetry are 0x0	EXC_TIMEOUT_RETRY occurs when otherPortCalPeriod and otherPortCalRetry are 0x0.			
42	WR Slave transition of WRPTP portState from RESP_CALIB_REQ to IDLE after EXC_TIMEOUT_RETRY occurs - otherPortCalPeriod and otherPortCalRetry are 0x0	To verify that a WRPTP enabled device in WR_SLAVE mode transitions it's port state from RESP_CALIB_REQ to IDLE state after EXC_TIMEOUT_RETRY occurs when otherPortCalPeriod and otherPortCalRetry are 0x0.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_028	MUST
43	WR Slave transition of WRPTP portState from RESP_CALIB_REQ to CALIBRATION before EXC_TIMEOUT_RETRY occurs - otherPortCalPeriod and otherPortCalRetry > 0x0	To verify that a WRPTP enabled device with it's port in PTP Slave transitions it's port WR state from RESP_CALIB_REQ to CALIBRATION state on the reception of CALIBRATED message before EXC_TIMEOUT_RETRY occurs when otherPortCalPeriod and otherPortCalRetry are greater than 0x0 (otherPortCalPeriod and otherPortCalRetry should be ignored by DUT).	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_029	MUST
44	WR Slave transition of WRPTP portState from RESP_CALIB_REQ to IDLE after EXC_TIMEOUT_RETRY occurs - otherPortCalPeriod and otherPortCalRetry > 0x0	To verify that a WRPTP enabled device with it's port in PTP Slave transitions it's port WR state from RESP_CALIB_REQ to IDLE state after EXC_TIMEOUT_RETRY occurs when otherPortCalPeriod and otherPortCalRetry are greater than 0x0 (otherPortCalPeriod and otherPortCalRetry should be ignored by DUT).	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Clause 6.7.4 Page 37, Figure 27 Page 62	WSMG_030	MUST
45	WR Slave transition of WRPTP portState from CALIBRATION to CALIBRATED	To verify that a WRPTP enabled device with it's port in PTP Slave sends CALIBRATED message and transitions it's port WR state from the CALIBRATION to CALIBRATED state.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Figure 27 Page 62	WSMG_031	MUST

S. No.	Title	Purpose	Reference	ID	Type
46	WR Slave re-entering of WRPTP portState - CALIBRATED - on expiry of WR_CALIBRATED_TIM EOUT	To verify that a WRPTP enabled device with it's port in PTP Slave sends CALIBRATED message and re-enters to it's port WR state CALIBRATED on expiry of WR_CALIBRATED_TIMEOUT.	White Rabbit Specification v2.0 July 2011, Clause 6.7.3 Pages 35, Figure 27 Page 62	WSMG_032	MUST