

TPS23882

SIFOs 802.3bt Conformance Test Report

v5.1.00



January 28th 2020

Introduction

1. Sifos Technologies

Sifos Technologies provides a one-box solution to facilitate complete testing and analysis of Power Sourcing Equipment (PSE) behaviors and overall compliance to the IEEE 802.3bt specification. The PSE Conformance Test Suite serves as a virtual industry standard for PSE specification compliance. SIFOS test coverage exceeds 95% of 802.3bt PSE PICS

2. Test Conditions

In addition to just running the basic conformance testing on an individual port and to better recreate the system-level environment, TI individually tests all ports of its PSE controller devices while having the background ports running under various other PoE-application conditions. TI further, repeats testing conditions over extended periods of time to ensure performance is consistent after multiple hours, days and/or continued operation. This test was run on TPS23882EVM-008 with TPS23882 in autonomous mode (with AUTO pin resistor being set to 62k Ω , 2-pair 30W) without loading SRAM.

For more information please refer to our FAQ on TI's E2E forum [here](#).

PSE Conformance Test Suite

December 17 2019 4:11 PM

Port Count..... 8

Loop Count..... 1

PSE Tested: Unspecified Type-3 30W



802.3bt 2Pr Conformance Report

version 5.1.00

Test Mode: 30 Watt PHY

report version 5.1.00

Sifos Interop Index*: 100%

Error Log: None

Chassis ID: 158.218.10.73

PSA-3000 Ports

TestLoop: 1

	5-1	5-2	6-1	6-2	7-1	7-2	8-1	8-2	UNITS	Min	Max	Average	Low Limit	P/F	High Limit	P/F
Test: det v																
Open Circuit Det Voc=	24.5	24.68	24.77	24.5	24.5	24.73	24.63	24.6	volts	24.5	24.77	24.61	2.8	Pass	30	Pass
Peak Det Vvalid=	7.16	7.16	7.08	7.15	7.15	7.13	7.15	7.12	volts	7.08	7.16	7.1	3.8	Pass	10	Pass
Min Det Vvalid=	4.57	4.58	4.53	4.58	4.59	4.57	4.59	4.58	volts	4.53	4.59	4.6	2.8	Pass	9	Pass
Det Volt Step dVtest=	2.58	2.57	2.55	2.57	2.55	2.56	2.56	2.54	volts	2.54	2.58	2.6	1	Pass	7.2	Pass
Detection Slew=	0	0	0	0	0	0	0	0	V/usec	0	0	0	0	Pass	0.1	Pass
Good Sig Det Pulse=	3	3	3	3	3	3	3	3	edges	3	3	3	1	Pass	9	Pass
Backoff Voltage=	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	volts	0.5	0.6	0.5	0	Pass	2.8	Pass
Non 802 Step V=	0	0	0	0	0	0	0	0	volts	0	0	0	0	Pass	0.1	Pass
High Sig MaxV=	11.44	11.38	11.3	11.42	11.32	11.37	11.4	11.34	volts	11.3	11.44	11.4	3.8	Pass	11	Info
Non 802 Discr ?=	0	0	0	0	0	0	0	0	****	0	0	0	0	Pass	0	Pass
Detect Strategy=	0	0	0	0	0	0	0	0	****	0	0	0	0	Pass	2	Pass
Test: det i																
Init Current Isc=	0.2	0.2	0.19	0.2	0.19	0.19	0.19	0.19	mA	0.19	0.2	0.19	0	Pass	5	Pass
Det Current Isc=	0.21	0.21	0.2	0.2	0.2	0.2	0.2	0.2	mA	0.2	0.21	0.2	0	Pass	5	Pass
Test: det range																
Rgood Max=	29	29	29	29	29	29	29	29	Kohm	29	29	29	26	Pass	32	Pass
Rgood Min=	17	17	17	17	17	17	17	17	Kohm	17	17	17	16	Pass	19	Pass
Rmid det=	29	29	29	29	29	29	29	29	Kohm	29	29	29	26	Pass	33	Pass
Rgood Cgood Max=	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	uF	0.1	0.1	0.1	0	Pass	10	Pass
Rbad Cbad Stat=	0	0	0	0	0	0	0	0	****	0	0	0	0	Pass	0	Pass
Test: det time																
Backoff Time Tdbo=	59	66	59	66	59	70	59	66	msec	59	70	63	-1	Pass	1500	Pass
Eff Backoff Tdbo eff=	59	66	59	66	59	70	59	66	msec	59	70	63	-1	Pass	1500	Pass
Backoff Type=	0	0	0	0	0	0	0	0	****	0	0	0	0	Pass	0	Pass
Detection Time Tdet=	299	311	299	299	301	301	301	299	msec	299	311	301.3	5	Pass	500	Pass
Total Det Time=	303	314	303	303	305	303	303	303	msec	303	314	304.6	5	Pass	1000	Pass
Test: det resource																
Output Impedance Zout=	450	450	450	450	450	450	450	450	KOhm	450	450	450	45	Pass	2000	Pass
Test: class v																
Class Voltage Vclass=	18.4	18.5	18.6	18.4	18.3	18.6	18.5	18.4	volts	18.3	18.6	18.5	15.5	Pass	20.5	Pass
Vclass Min=	18.4	18.5	18.7	18.4	18.3	18.6	18.5	18.4	volts	18.3	18.7	18.5	15.5	Pass	20.5	Pass
Mark Voltage Vmark=	9	8.8	8.9	9	8.7	8.9	8.9	8.7	volts	8.7	9	8.9	7	Pass	10	Pass
Mark Voltage Min=	8.7	8.8	8.9	8.7	8.7	8.8	8.8	8.7	volts	8.7	8.9	8.8	7	Pass	10	Pass
Class Reset V=	-1	-1	-1	-1	-1	-1	-1	-1	volts	-1	-1	-1	-1	Pass	2.8	Pass
Test: class time																
Event Count=	3	3	3	3	3	3	3	3	****	3	3	3	2	Pass	3	Pass
Event1 Tcle1=	97.1	97.5	97.5	97.1	97.1	97.1	97.1	97.5	msec	97.1	97.5	97.3	88	Pass	105	Pass
Event2 Tcle2=	9.4	9.4	9	9.4	9.4	9.4	9.4	9.4	msec	9	9.4	9.4	5.6	Pass	30	Pass
Mark Tme1=	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7	msec	7	7.4	7.4	5.6	Pass	12.4	Pass
Mark Tme2=	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	msec	7.4	7.4	7.4	5.6	Pass	376	Pass
Class Reset Time=	10000	10000	10000	10000	10000	10000	10000	10000	msec	10000	10000	10000	15	Pass	10000	Pass
Class Probe Events=	0	0	0	0	0	0	0	0	****	0	0	0	0	Pass	3	Pass
Test: class err																
Class lim=	78	77	76	76	78	77	77	77	mA	76	78	77	51	Pass	100	Pass
Pwr Cl lim=	0	0	0	0	0	0	0	0	****	0	0	0	0	Pass	0	Pass
Pwr Cl 55=	0	0	0	0	0	0	0	0	****	0	0	0	0	Pass	0	Pass
Mark lim=	6	6	6	6	6	6	6	6	mA	6	6	6	5	Pass	100	Pass
Pwr Cl Uneven=	0	0	0	0	0	0	0	0	****	0	0	0	0	Pass	0	Pass
Treset=	74	74	74	74	74	74	74	76	msec	74	76	74.3	15	Pass	10000	Pass
Test: pwrup time																
Pwr-On Rise Time Trise=	26	23	24	23	25	26	26	23	usec	23	26	25	15	Pass	50000	Pass
Power-On Time Tpon=	138.7	138.7	138.7	138.7	138.7	138.7	136.7	138.7	msec	136.7	138.7	138.5	0	Pass	400	Pass
Test: pwrup inrush																
Init Iinrush=	424.25	422.25	421	422.25	422.75	423	422.25	423.75	mA	421	424.25	422.7	400	Pass	450	Pass
Max Iinrush c4=	423	421.38	419	422	422.25	422.25	421.75	422.88	mA	419	423	421.8	400	Pass	450	Pass
Min Iinrush=	422.25	420.75	418.25	421	421.5	421.75	421	421.75	mA	418.25	422.25	421	400	Pass	450	Pass
Tinrush=	59.6	59.6	59.2	59.2	59.2	59.6	59.2	59.2	msec	59.2	59.6	59.4	50	Pass	75	Pass
Inrush 45m=	54.8	54.8	54.8	54.8	54.8	54.9	54.9	55	Volts	54.8	55	54.9	50	Pass	57	Pass
Inrush Voltage=	31	31	30.8	30.9	30.9	30.8	30.7	30.8	Volts	30.7	31	30.9	30	Pass	57	Pass

Max Init Inrush=	565.5	564.3	539.8	543	582.8	598	534.5	571.8	mA	534.5	598	562.5	0	Pass	2000	Pass
Inrush Strategy c4=	0	0	0	0	0	0	0	0	****	0	0	0	0	Pass	0	Pass
Test: pwrn v																
Vport min 2=	54.4	54.4	54.4	54.3	54.4	54.3	54.3	54.5	V	54.3	54.5	54.4	50	Pass	57	Pass
Vport max 2=	54.9	54.9	54.9	54.9	54.9	55	55	55	V	54.9	55	54.9	50	Pass	57	Pass
Vport ripple 2=	9	13	8	9	9	12	9	12	mVpp	8	13	10.1	0	Pass	500	Pass
Vport noise 2=	12	9	13	8	13	8	12	17	mVpp	8	17	11.5	0	Pass	200	Pass
Vtrans min 2=	54.3	54.3	54.3	54.1	54.3	54.2	54.1	54.4	V	54.1	54.4	54.3	50	Pass	57	Pass
Vtrans max 2=	54.9	55	54.9	54.9	54.9	55	55	55.1	V	54.9	55.1	55	50	Pass	57	Pass
Test: pwrn pwr cap																
Pcon c4=	30.7	30.7	30.7	30.7	30.7	30.4	30.8	30.7	watts	30.4	30.8	30.7	28.7	Pass	38.9	Pass
Icon % c4=	105.8	105.8	105.6	105.5	105.7	104.8	106	105.9	%	104.8	106	105.6	100	Pass	9999	Pass
Type-2 Enable=	1	1	1	1	1	1	1	1	****	1	1	1	1	Pass	1	Pass
Test: pwrn maxi																
Ilim Peak=	195	194.5	190.5	191	197.3	196	194	196	mA	190.5	197.3	194.3	0	Pass	1750	Pass
Ilim Min 2=	685.8	685.5	684.5	684.5	684.8	686.5	687	685.5	mA	684.5	687	685.5	683	Pass	1750	Pass
Tlim 2=	60.5	60.2	60.5	60.5	60.5	60.5	60.2	60.5	msec	60.2	60.5	60.4	10	Pass	75	Pass
Vlim 2=	54.2	54.1	54.2	54	54.1	54.1	54.1	54.3	V	54	54.3	54.1	50	Pass	57	Pass
Ilim Max 2=	950.3	949.5	948.8	948.8	949	951.3	951.8	950	mA	948.8	951.8	949.9	0	Pass	1750	Pass
Ilim Low V Tol 2=	60.5	60.2	60.5	60.5	60.5	60.5	60.2	60.5	msec	60.2	60.5	60.4	10	Pass	9999	Pass
Ktran lo 2=	108.3	108.2	108.3	108	108.2	108.1	108	108.6	%	108	108.6	108.2	92.4	Pass	115	Pass
Test: pwrn overl																
%Ipeak 2=	125	125	125	125	125	125	125	125	%	125	125	125	100	Pass	125	Pass
Vport Ipeak 2=	54.3	54.2	54.3	54.1	54.2	54.2	54.1	54.4	V	54.1	54.4	54.2	50	Pass	57	Pass
Vport 5%DC 2=	54.3	54.2	54.3	54.1	54.2	54.2	54.1	54.4	V	54.1	54.4	54.2	50	Pass	57	Pass
Test: mps dc valid																
Min Valid Time Tmps=	4	4	4	4	4	4	4	4	msec	4	4	4	1	Pass	6	Pass
Duty Cycle tol=	1	1	1	1	1	1	1	1	****	1	1	1	1	Pass	1	Pass
Test: mps dc pwr dn																
Min Valid I hold=	6	6	6	6	6	6	6	6	mA	6	6	6	5	Pass	10	Pass
Time-to-Shutdown Tmpdo=	360	360	360	360	360	360	360	360	msec	360	360	360	320	Pass	400	Pass
Max Voltage Vopen max=	24.5	24.7	24.8	24.5	24.5	24.7	24.6	24.6	volts	24.5	24.8	24.6	-1	Pass	30	Pass
Test: pwr dn overl																
Icut 2=	569	569	569	569	569	569	569	567	mA	567	569	568.8	-1	Pass	1750	Pass
Tcut 2=	62.2	64.2	62.6	62.2	62.4	61.7	61.9	63	msec	61.7	64.2	62.5	10	Pass	9999	Pass
Isoft 2=	-1	-1	-1	-1	-1	-1	-1	-1	mA	-1	-1	-1	-1	Pass	683	Pass
Tsoft 2=	-1	-1	-1	-1	-1	-1	-1	-1	msec	-1	-1	-1	-1	Pass	2000	Pass
Test: pwr dn time																
Turn-Off Time Toff=	23.1	21.8	22.7	21.3	21.6	21.3	22.3	22.1	mSec	21.3	23.1	22	0	Pass	500	Pass
Output Cap Cout=	0.102	0.0921	0.1016	0.0871	0.0831	0.0828	0.0972	0.0929	uF	0.0828	0.102	0.09	-1	Pass	0.52	Pass
Output Load Rp=	104.5	111	103	116.4	126	124.3	106.5	111.6	Kohm	103	126	113	45	Pass	50000	Pass
Test: pwr dn v																
Avg Idle Voff=	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	VDC	0.1	0.1	0.1	0	Pass	2.8	Pass
Error Delay Ted=	1445.3	1429.7	1460.9	1429.7	1445.3	1429.7	1429.7	1445.3	msec	1429.7	1460.9	1439	750	Pass	10000	Pass
Peak Error Delay Ved=	0.7	0.2	0.5	0.2	0.8	0.3	0.3	0.3	VDC	0.2	0.8	0.4	0	Pass	20.5	Pass
Test Port Model Number:	3202	3202	3202	3202	3202	3202	3202	3202								
Test Port Hardware Version:	8	8	8	8	9	9	9	9								
Test Port Firmware Version:	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.14								

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