

PHY Performance Test Suite Report



192.168.221.109 Test Port 6,2 Date May 3 2023 Time 12:57 PM DUT Type Sample Under-Powered 1000Base-T Port 1

Basic Capabilities

Auto-Negotiation										
AUTO-NEG	ACKS	1000BaseT	100BaseTX	10BaseT	100BaseT4	Pause	Link_OK	MDI/MDI-X	NLP_Link	
EXTENDED	EXTENDED	HALF+FULL	HALF+FULL	HALF+FULL	INC	NO	YES	AUTO	LINKED	
Rx_OK	Gig Mode	M-S Fault	Mstr Fault	Siv Fault	Stability	Stability Details				
1000Base-T Links	YES	AUTO	NONE	NONE	NONE	OK	N/A			

	MDI Connection					MDI-X Connection				
	10BaseT	100BaseTx	Master	1000BaseT	Slave	10BaseT	100BaseTx	Master	1000BaseT	Slave
	Full Duplex	100	100	100	100	100	100	100	100	100
Half Duplex	100	100	100	100	100	100	100	100	100	100
Link Time*(sec)	0.3	0.4				1.5	2.0			

* Link Time is auto-negotiated for MDI/MDI-X

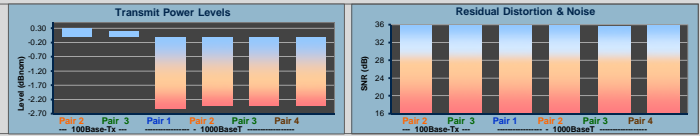
Transmitter & Interface Tests

Tx Power Level					
Link Rate	Pair 1	Pair 2	Pair 3	Pair 4	Units
100BaseTX	0.3	0.2			dB/nom
1000BaseT	-2.5	-2.4	-2.4	-2.4	dB/nom

1000 Tx Power Adaptation	
Cable Len?	PVA Stim.
NO	N/A

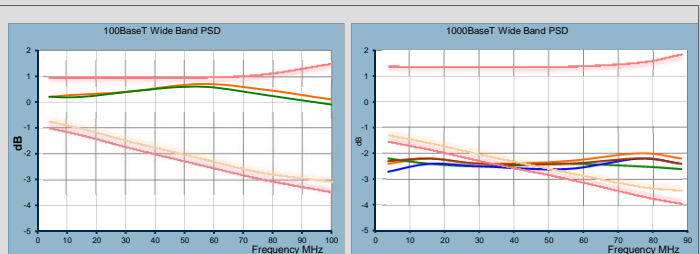
Signal Quality (SNR)							
Link Rate	Pair 1	Pair 2	Pair 3	Pair 4	Average	Min SNR	Units
100BaseTX		36	36		36	36	dB
1000BaseT	36	36	35.6	36	35.9	35.6	dB

Low Frequency PSD										
Link Rate	Frequency	Pair 1 PSD	Pair 2 PSD	Pair 3 PSD	Pair 4 PSD	Average	Min PSD	Units		
100BaseTX	0.02 MHz			0.8	0.4	0.6	0.4	dB		
	0.08 MHz			0.5	0.3	0.4	0.3	dB		
	0.33 MHz			0	0.1	0.05	0	dB		
1000BaseT	1 MHz			0.1	0.1	0.1	0.1	dB		
	2 MHz			0.1	0.2	0.15	0.1	dB		
	0.02 MHz	-2.3	-2.2	-2.2	-2.3	-2.25	-2.3	dB		
	0.08 MHz	-2.3	-2.2	-2.2	-2.3	-2.25	-2.3	dB		
	0.33 MHz	-2.4	-2.2	-2.3	-2.4	-2.325	-2.4	dB		
	1 MHz	-2.4	-2.2	-2.4	-2.4	-2.35	-2.4	dB		
	2 MHz	-2.4	-2.3	-2.4	-2.3	-2.35	-2.4	dB		

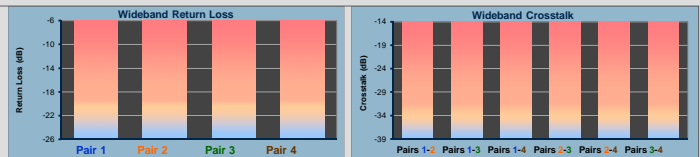


Estimated Pk-Pk Voltage & Droop						PSD Trace Color Key:			
Link Rate	UTP Diff. Volts Pk-Pk	Pair 1 Vpp	Pair 2 Vpp	Pair 3 Vpp	Pair 4 Vpp	Pair 1	Pair 2	Pair 3	Pair 4
100BaseTX	2.019		2.042						
	500ns Droop% >2.4usec		99.0%	98.4%					
1000BaseT	Pk. Diff. Volts T.S. #1 A->B	1.150	1.163	1.150	1.163				
	Droop% T.S. #1 F->G.H->J	96.0%	96.0%	96.2%	95.8%				

Wide Band PSD										
Link Rate	Frequency	Pair 1 PSD	Pair 2 PSD	Pair 3 PSD	Pair 4 PSD	Average	Min PSD	Units		
100BaseTX	4 MHz		0.2	0.2	0.2	0.2	0.2	dB		
	16 MHz		0.3	0.2	0.25	0.2	0.2	dB		
	31 MHz		0.4	0.4	0.4	0.4	0.4	dB		
	55 MHz		0.7	0.6	0.65	0.6	0.6	dB		
	76 MHz		0.5	0.3	0.4	0.3	0.3	dB		
1000BaseT	100 MHz		0.1	-0.1	0	-0.1	-0.1	dB		
	4 MHz	-2.7	-2.4	-2.2	-2.3	-2.4	-2.7	dB		
	16 MHz	-2.4	-2.2	-2.4	-2.2	-2.3	-2.4	dB		
	31 MHz	-2.5	-2.4	-2.5	-2.4	-2.45	-2.5	dB		
	55 MHz	-2.6	-2.3	-2.4	-2.4	-2.425	-2.6	dB		
	76 MHz	-2.2	-2	-2.5	-2.4	-2.225	-2.5	dB		
	88 MHz	-2.4	-2.2	-2.6	-2.4	-2.4	-2.6	dB		



Skew, Echo, Xtalk (1000BaseT Interfaces)										
Time Skew	Pair 1	Pair 2	Pair 3	Pair 4	Average	Maximim	Units			
Return Loss	0	0	0	0	0	0	nsec			
	-26	-26	-25.6	-26	-25.9	-25.6	dB			
Crosstalk	Pairs 1-2	Pairs 1-3	Pairs 1-4	Pairs 2-3	Pairs 2-4	Pairs 3-4	Average	Maximim	Units	
	-39	-39	-39	-39	-39	-39	-39	-39	dB	



Receiver Tests Maximum Impairment

100Base-T MDI Line Loss and Link Chk		
Slew_Rate=	5 ns -2.7dB	UP
Tx Offset	-50 ppm	UP
Tx Offset	50 ppm	UP
Tx Offset	-100 ppm	UP
Tx Offset	100 ppm	UP
Noise	10 dB(40mV)	UP
Noise	14 dB(40mV)	UP
Jitter	11.5 dB(1.4ns)	UP
Jitter	16 dB(1.4ns)	UP
Noise+Jitter	10.5 11.5 dB & dB	UP
Noise+Jitter	13.5 15 dB & dB	UP

1000Base-Tx MDI Line Loss and LinkMon		
Slew_Rate=	5 ns -2.7dB	100 %
Tx Offset	-50 ppm	100 %
Tx Offset	50 ppm	100 %
Tx Offset	-100 ppm	100 %
Tx Offset	100 ppm	100 %
Noise	5 dB(40mV)	100 %
Noise	11 dB(40mV)	100 %
Jitter	8.5 dB(1.4ns)	100 %
Jitter	14 dB(1.4ns)	100 %
Noise+Jitter	4.7 5 dB & dB	100 %
Noise+Jitter	10 13 dB & dB	100 % SNR1

1000Base-T MASTER: Line Loss and LinkMon		
Slew_Rate=	3.5 ns -1.9dB	100 %
Tx Offset	-50 ppm	100 %
Noise	-1 dB(40mV)	100 %
Noise	1.5 dB(40mV)	100 %
Noise	4 dB(40mV)	100 %
Jitter	-4 dB(1.4ns)	100 %
Jitter	-2 dB(1.4ns)	100 %
Jitter	0 dB(1.4ns)	15 %
Noise+Jitter	-1.5 -4.5 dB & dB	100 %
Noise+Jitter	-1.3 dB & dB	100 %
Noise+Jitter	3.5 -1 dB & dB	100 % SNR3

Summary			
100Base-T	Limited	Good	Excellent
1000Base-Tx	Limited	Good	Excellent
1000Base-T	Limited	Good	Excellent

100Base-T MDI-X Line Loss and Link Chk		
Slew_Rate=	5 ns -2.7dB	UP
Tx Offset	-50 ppm	UP
Tx Offset	50 ppm	UP
Tx Offset	-100 ppm	UP
Tx Offset	100 ppm	UP
Noise	10 dB(40mV)	UP
Noise	14 dB(40mV)	UP
Jitter	11.5 dB(1.4ns)	UP
Jitter	16 dB(1.4ns)	UP
Noise+Jitter	10.5 11.5 dB & dB	UP
Noise+Jitter	13.5 15 dB & dB	UP

1000Base-Tx MDI-X Line Loss and LinkMon		
Slew_Rate=	5 ns -2.7dB	100 %
Tx Offset	-50 ppm	100 %
Tx Offset	50 ppm	100 %
Tx Offset	-100 ppm	100 %
Tx Offset	100 ppm	100 %
Noise	5 dB(40mV)	100 %
Noise	11 dB(40mV)	100 %
Jitter	8.5 dB(1.4ns)	100 %
Jitter	14 dB(1.4ns)	100 %
Noise+Jitter	4.7 5 dB & dB	100 %
Noise+Jitter	10 13 dB & dB	100 % SNR2

1000Base-T SLAVE: Line Loss and LinkMon		
Slew_Rate=	5 ns -2.7dB	100 %
Tx Offset	-50 ppm	100 %
Tx Offset	50 ppm	100 %
Tx Offset	-100 ppm	100 %
Tx Offset	100 ppm	100 %
Noise	5 dB(40mV)	100 %
Noise	11 dB(40mV)	100 %
Jitter	8.5 dB(1.4ns)	100 %
Jitter	14 dB(1.4ns)	100 %
Noise+Jitter	100 -1 ppm & dB	100 %
Offset+Noise	-100 -1 ppm & dB	100 %
Offset+Noise	-100 1.5 ppm & dB	100 %
Offset+Noise	100 1.5 ppm & dB	100 %
Offset+Noise	-100 -4 ppm & dB	100 %
Offset+Noise	100 -4 ppm & dB	100 % SNR4

Local Rx Health (Lowest Pair)		
100 Base-Tx	SNR1	23.4
100 Base-Tx	SNR2	27.3
1000 Base-T	SNR3	22.1
1000 Base-T	SNR4	24.6