

# PHY Performance Test Suite Report

Color Key: Nominal Marginal Failure | Suite Version: 4.1.09.12-18-15



192.168.221.108 | Test Port: 1,1 | Date: January 27 2016 | Time: 3:48 PM | DUT Type: Sample 10/100/1000 Port w/ Rx Packets | Port 1

## Basic Capabilities

### Auto-Negotiation

AUTO-NEG	ACKS	100BaseT	100BaseTX	10BaseT	10BaseT4	Pause	Link_OK	MDI/MDI-X	NLP_Link
EXTENDED	EXTENDED	FULL	HALF+FULL	HALF+FULL	NO	RESPOND	YES	AUTO	LINKED
1000Base-T Links	YES	AUTO	NONE	NONE	NONE	NONE	2	2	OK
							Training Time (sec)		1.3

### Link Verification and Integrity

	MDI Connection				MDI-X Connection			
	10BaseT	100BaseTx	Master	Slave	100BaseT	Master	Slave	1000BaseT
Full Duplex	100	100	100	100	100	100	100	100
Half Duplex	100	100	N/A	N/A	100	100	N/A	100

## Transmitter & Interface Tests

### Tx Power Level

Link Rate	Pair 1	Pair 2	Pair 3	Pair 4	Units
100BaseTX	0.2	0.2			dBVnom
1000BaseT	-0.7	-0.5	-0.5	-0.6	dBVnom

### Signal Quality (SNR)

Link Rate	Pair 1	Pair 2	Pair 3	Pair 4	Average	Min SNR	Units
100BaseTX		36	36		36	36	dB
1000BaseT	33.8	31.9	34.6	32.8	33.275	31.9	dB

### Low Frequency PSD

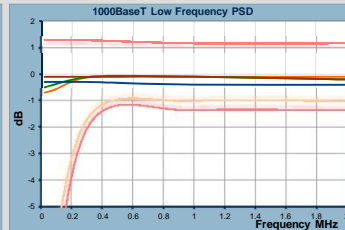
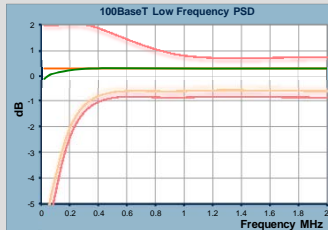
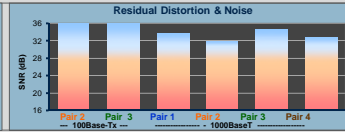
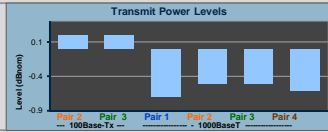
Link Rate	Frequency	Pair 1 PSD	Pair 2 PSD	Pair 3 PSD	Pair 4 PSD	Average	Min PSD	Units
100BaseTX	0.02 MHz			0.3	-0.1	0.1	-0.1	dB
	0.08 MHz			0.3	0.1	0.2	0.1	dB
	0.33 MHz			0.3	0.3	0.3	0.3	dB
1000BaseT	2 MHz			0.3	0.3	0.3	0.3	dB
	0.02 MHz	-0.3	-0.7	-0.5	-0.1	-0.4	-0.7	dB
	0.08 MHz	-0.3	-0.6	-0.4	-0.1	-0.35	-0.6	dB
	0.33 MHz	-0.3	-0.1	-0.1	-0.1	-0.15	-0.3	dB
	1 MHz	-0.4	-0.1	-0.1	-0.1	-0.175	-0.4	dB
2 MHz	-0.4	-0.1	-0.2	-0.2	-0.225	-0.4	dB	

### Estimated Pk-Pk Voltage & Droop

Link Rate	UTP Diff. Volts Pk-Pk	Pair 1 Vpp	Pair 2 Vpp	Pair 3 Vpp	Pair 4 Vpp
100BaseTX	500ms Droop%, >2.4µsec	2.065	2.065		
	Pk. Diff. Volts T.S. #1 A>B	1.440	1.489	1.473	1.473
1000BaseT	Droop% T.S. #1 F->G(H>J)	96.0%	94.6%	95.3%	96.0%

### PSD Trace Color Key

Pair 1	Pair 2	Pair 3	Pair 4
█	█	█	█

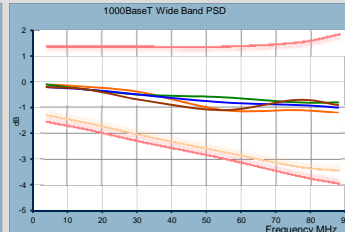
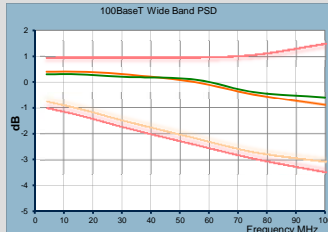


## Wide Band PSD

Link Rate	Frequency	Pair 1 PSD	Pair 2 PSD	Pair 3 PSD	Pair 4 PSD	Average	Min PSD	Units
100BaseTX	4 MHz		0.4	0.3		0.35	0.3	dB
	16 MHz		0.4	0.3		0.35	0.3	dB
	31 MHz		0.3	0.2		0.25	0.2	dB
	55 MHz		0	0.1		0.05	0	dB
1000BaseT	76 MHz	-0.5	-0.4	-0.4	-0.4	-0.45	-0.5	dB
	100 MHz	-0.9	-0.6	-0.6	-0.6	-0.75	-0.9	dB
	4 MHz	-0.2	-0.1	-0.1	-0.2	-0.15	-0.2	dB
	16 MHz	-0.3	-0.2	-0.3	-0.3	-0.275	-0.3	dB
	31 MHz	-0.5	-0.4	-0.5	-0.7	-0.525	-0.7	dB
	55 MHz	-0.8	-1.1	-0.6	-1.1	-0.9	-1.1	dB
	76 MHz	-0.9	-1.1	-0.8	-0.7	-0.875	-1.1	dB
	88 MHz	-1	-1.2	-0.8	-0.9	-0.975	-1.2	dB

### Estimated Mask Fits

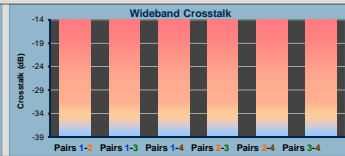
Link Rate	Rise/Fall Time: 4x1 nsec	Pair 1 Fit	Pair 2 Fit	Pair 3 Fit	Pair 4 Fit
100BaseTX	Test Signal #1 Mask Fit	Fit OK	Fit OK	4.35	4.21
1000BaseT	Test Signal #1 Mask Fit	Fit OK	Fit OK	Fit OK	Fit OK



## Skew, Echo, Xtalk

### (1000BaseT Interfaces)

Time Skew	Pair 1	Pair 2	Pair 3	Pair 4	Average	Maximim	Units
Time Skew	0	0	0	0	0	0	nsec
Return Loss	-21.6	-20.3	-19.7	-23.2	-21.2	-19.7	dB
Crosstalk	-39	-39	-39	-39	-39	-39	dB



## Receiver Tests

### 10Base-T MDI Line Loss and

Line Loss+Slew	5 ns -2.7dB	Packets
Loss+Tx Offset	-50 ppm	100%
Loss+Tx Offset	50 ppm	100%
Loss+Tx Offset	-100 ppm	100%
Loss+Tx Offset	100 ppm	100%
Loss+Noise	10 dB(40mV)	100%
Loss+Noise	14 dB(40mV)	100%
Loss+Jitter	17 dB(1.4ns)	100%
Loss+Jitter	20 dB(1.4ns)	100%
Noise+Jitter	10.5, 17 dB & dB	100%
Noise+Jitter	13.5, 19.5 dB & dB	100%

### 100Base-Tx MDI Line Loss and

Line Loss+Slew	5 ns -2.7dB	Packets
Loss+Tx Offset	-50 ppm	100%
Loss+Tx Offset	50 ppm	100%
Loss+Tx Offset	-100 ppm	100%
Loss+Tx Offset	100 ppm	100%
Loss+Noise	5 dB(40mV)	100%
Loss+Noise	11 dB(40mV)	100%
Loss+Jitter	17 dB(1.4ns)	100%
Loss+Jitter	17 dB(1.4ns)	100%
Noise+Jitter	4, 10 dB & dB	100%
Noise+Jitter	10, 16 dB & dB	100% SNR1

### 1000Base-T MASTER: Line Loss+

Line Loss+Slew	3.5 ns -1.9dB	Packets
Loss+Tx Offset	-50 ppm	100%
Loss+Tx Offset	50 ppm	100%
Loss+Tx Offset	-100 ppm	100%
Loss+Tx Offset	100 ppm	100%
Loss+Noise	1.5 dB(40mV)	100%
Loss+Noise	4 dB(40mV)	100%
Loss+Jitter	-1 dB(1.4ns)	100%
Loss+Jitter	1.5 dB(1.4ns)	100%
Loss+Jitter	11 dB(1.4ns)	96.5%
Noise+Jitter	-1.5, -2.5 dB & dB	100%
Noise+Jitter	1, 0 dB & dB	100%
Noise+Jitter	3.5, 2.5 dB & dB	99.6% SNR3

### 10Base-T MDI-X Line Loss and

Line Loss+Slew	5 ns -2.7dB	Packets
Loss+Tx Offset	-50 ppm	100%
Loss+Tx Offset	50 ppm	100%
Loss+Tx Offset	-100 ppm	100%
Loss+Tx Offset	100 ppm	100%
Loss+Noise	10 dB(40mV)	100%
Loss+Noise	14 dB(40mV)	100%
Loss+Jitter	17 dB(1.4ns)	100%
Loss+Jitter	20 dB(1.4ns)	100%
Noise+Jitter	10.5, 17 dB & dB	100%
Noise+Jitter	13.5, 19.5 dB & dB	100%

### 100Base-Tx MDI-X Line Loss and

Line Loss+Slew	5 ns -2.7dB	Packets
Loss+Tx Offset	-50 ppm	100%
Loss+Tx Offset	50 ppm	100%
Loss+Tx Offset	-100 ppm	100%
Loss+Tx Offset	100 ppm	100%
Loss+Noise	5 dB(40mV)	100%
Loss+Noise	11 dB(40mV)	100%
Loss+Jitter	17 dB(1.4ns)	100%
Loss+Jitter	17 dB(1.4ns)	100%
Noise+Jitter	4, 10 dB & dB	100%
Noise+Jitter	10, 16 dB & dB	100% SNR2

### 1000Base-T SLAVE: Line Loss+

Line Loss+Slew	5 ns -2.7dB	Packets
Loss+Tx Offset	-100 ppm	100%
Loss+Tx Offset	100 ppm	100%
Loss+Tx Offset	-115 ppm	100%
Loss+Tx Offset	115 ppm	100%
Offset+Noise	-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

### Summary

Link Rate	Limited	Good	Excellent
10Base-T			
100Base-Tx	Limited	Good	Excellent
1000Base-T	Limited	Good	Excellent

### Local Rx Health (Lowest Pair)

Link Rate	SNR1	SNR2	SNR3	SNR4
100 Base-TX				
1000 Base-TX	30.8	29.4	24.5	24.4
1000 Base-T				