



3933 US Route 11
Cortland, NY 13045

Telephone: (607) 753-6711
Facsimile: (607) 758-3659
www.intertek.com

January 6, 2012

Test report number 100608092CRT-001
Project number 100608092-311

L-Com Inc
45 Beechwood Drive
L-Com Global Connectivity
North Andover, MA 01845

TEST:

Competitive performance testing of telecommunication patch cords to the requirements of ANSI/TIA-568-C.2 for Category 5e patch cords.

STANDARD USED:

ANSI/TIA-568-C.2-2009: Balanced Twisted-Pair Telecommunications Cabling and Components Standards, dated August 2009

SECTIONS:

6.9 Cords and Jumpers Transmission Performance (6.9.1 to 6.9.2)

AUTHORIZATION:

The project was authorized by Mr. David Gallagher, representing the client, L-Com Inc, with signed quotation number 500349454.

SAMPLES DESCRIPTION:

The client supplied five (5) samples of 2 meter length patch cords identified as part number TRD815R-7 and five (5) samples of 2 meter length patch cords identified as part number UCA5-07-BL. The samples were received on December 22, 2011 and were in good condition.

EQUIPMENT LIST:

The following equipment was employed in conducting the tests.

<u>Equipment used</u>	<u>Model number</u>	<u>Control number</u>	<u>Calibration date</u>	<u>Calibration due date</u>
Fluke Networks field tester	DTX-1800	N1134	12/5/2011	12/5/2012

DATE OF TEST:

January 6, 2011

TEST REPORT REVISION HISTORY:

First Issue: January 6, 2012 Original Document



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RESULTS: See appendixes A and B for the test results.

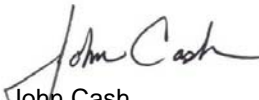
CONCLUSION:

The telecommunication patch cords, identified as part number TRD815R-7, did comply with the indicated applicable transmission requirements. The telecommunication patch cords, identified as part number UCA5-07-BL failed the Return Loss parameter. The testing was performed at Intertek located in Cortland, New York.

The procedures and requirements were taken from the standard referred to on page 1.

Reviewed and Approved By:


Antoine Pelletier
Engineer
Global Cabling Products Testing


John Cash
Technician
Global Cabling Products Testing



L-Com Inc

Test report number 100608092CRT-001
January 6, 2012

Appendix A

Test results for part number TRD815R-7

This appendix contains 5 pages.



Cable ID: 100608092CRT-001-A-1

Test Summary: PASS

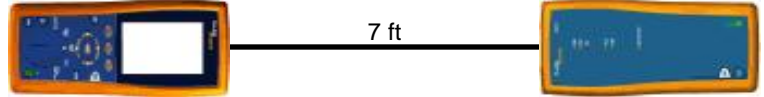
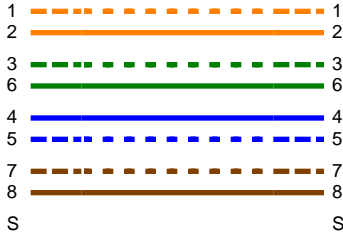
Date / Time: 01/06/2012 09:07:26am
Headroom: 5.3 dB (NEXT 36-45)
Test Limit: TIA Patch Cord Cat5e 2.0m
 Cable Type: Cat 5e UTP

Operator: Your Name
 Software Version: 2.5200
 Limits Version: 1.7000
 NVP: 69.0%

Model: DTX-1800
 Main S/N: 9385159
 Remote S/N: 9385160
 Main Adapter: DTX-PCU6M
 Remote Adapter: DTX-PCU6R

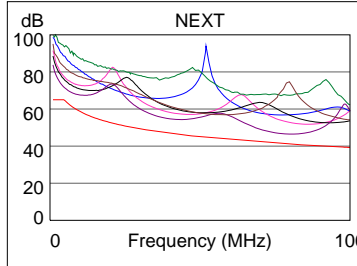
Wire Map (T568B)

PASS

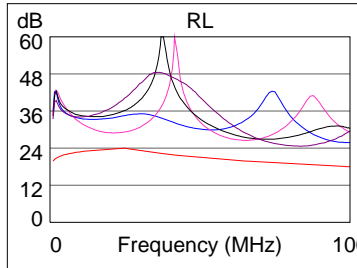


Length (ft)	[Pair 12]	7
Prop. Delay (ns)	[Pair 36]	11
Delay Skew (ns)	[Pair 36]	1
Resistance (ohms)	[Pair 12]	0.5

PASS	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
Worst Pair	36-45		36-45	
NEXT (dB)	5.3		5.3	
Freq. (MHz)	76.8		79.0	
Limit (dB)	41.5		41.2	



PASS	MAIN	SR	MAIN	SR
	Worst Pair	36		78
RL (dB)	5.0		5.7	
Freq. (MHz)	22.4		80.8	
Limit (dB)	23.9		18.9	





Cable ID: 100608092CRT-001-A-2

Test Summary: PASS

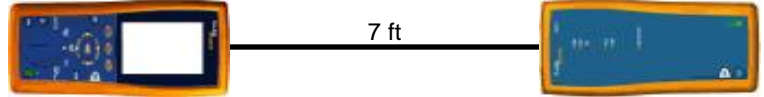
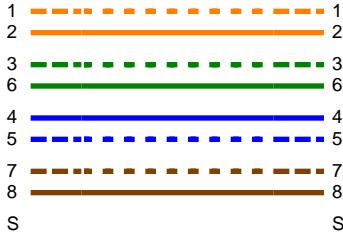
Date / Time: 01/06/2012 09:11:52am
Headroom: 6.5 dB (NEXT 36-45)
Test Limit: TIA Patch Cord Cat5e 2.0m
 Cable Type: Cat 5e UTP

Operator: Your Name
 Software Version: 2.5200
 Limits Version: 1.7000
 NVP: 69.0%

Model: DTX-1800
 Main S/N: 9385159
 Remote S/N: 9385160
 Main Adapter: DTX-PCU6M
 Remote Adapter: DTX-PCU6R

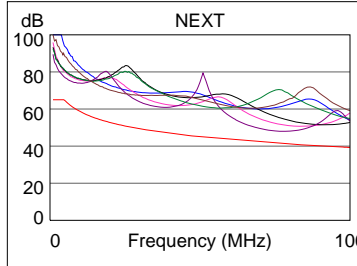
Wire Map (T568B)

PASS

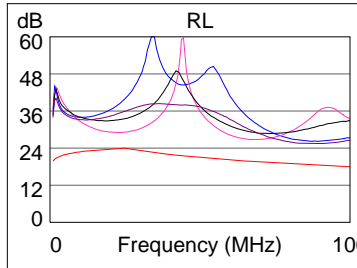


Length (ft)	[Pair 12]	7
Prop. Delay (ns)	[Pair 36]	11
Delay Skew (ns)	[Pair 36]	1
Resistance (ohms)	[Pair 12]	0.4

	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	36-45		36-45	
NEXT (dB)	6.5		6.5	
Freq. (MHz)	74.0		76.5	
Limit (dB)	41.8		41.5	



	MAIN	SR	MAIN	SR
	PASS			
Worst Pair	36		78	
RL (dB)	5.1		6.8	
Freq. (MHz)	22.6		86.0	
Limit (dB)	23.9		18.6	





Cable ID: 100608092CRT-001-A-3

Test Summary: PASS

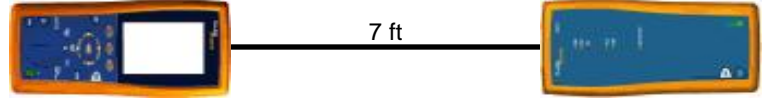
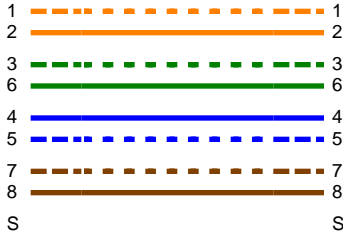
Date / Time: 01/06/2012 09:13:14am
Headroom: 5.5 dB (NEXT 36-45)
Test Limit: TIA Patch Cord Cat5e 2.0m
 Cable Type: Cat 5e UTP

Operator: Your Name
 Software Version: 2.5200
 Limits Version: 1.7000
 NVP: 69.0%

Model: DTX-1800
 Main S/N: 9385159
 Remote S/N: 9385160
 Main Adapter: DTX-PCU6M
 Remote Adapter: DTX-PCU6R

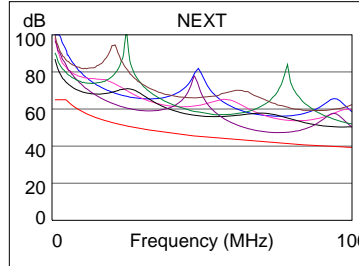
Wire Map (T568B)

PASS

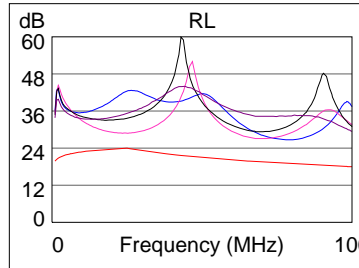


Length (ft)	[Pair 12]	7
Prop. Delay (ns)	[Pair 36]	11
Delay Skew (ns)	[Pair 36]	1
Resistance (ohms)	[Pair 12]	0.4

	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	36-45		36-45	
NEXT (dB)	5.5		5.5	
Freq. (MHz)	71.5		73.8	
Limit (dB)	42.1		41.8	



	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	36		12	
RL (dB)	4.8		7.6	
Freq. (MHz)	24.1		77.5	
Limit (dB)	24.0		19.1	





Cable ID: 100608092CRT-001-A-4

Test Summary: PASS

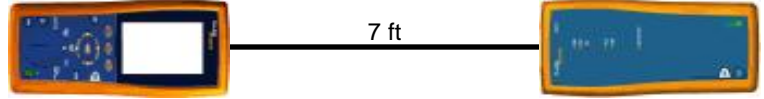
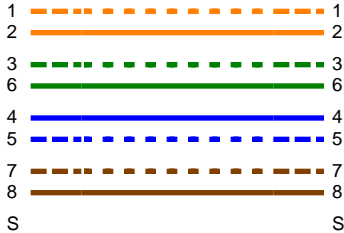
Date / Time: 01/06/2012 09:31:04am
Headroom: 4.4 dB (NEXT 36-45)
Test Limit: TIA Patch Cord Cat5e 2.0m
 Cable Type: Cat 5e UTP

Operator: Your Name
 Software Version: 2.5200
 Limits Version: 1.7000
 NVP: 69.0%

Model: DTX-1800
 Main S/N: 9385159
 Remote S/N: 9385160
 Main Adapter: DTX-PCU6M
 Remote Adapter: DTX-PCU6R

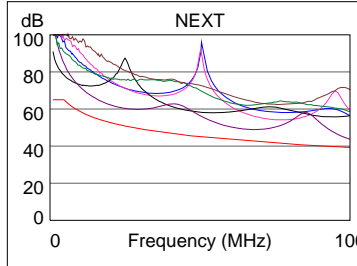
Wire Map (T568B)

PASS

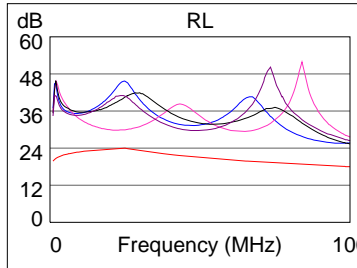


Length (ft)	[Pair 12]	7
Prop. Delay (ns)	[Pair 36]	11
Delay Skew (ns)	[Pair 36]	1
Resistance (ohms)	[Pair 12]	0.4

	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	36-45		36-45	
NEXT (dB)	4.4		4.4	
Freq. (MHz)	100.0		100.0	
Limit (dB)	39.3		39.3	



	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	36		45	
RL (dB)	5.9		7.3	
Freq. (MHz)	22.4		100.0	
Limit (dB)	23.9		18.0	





Cable ID: 100608092CRT-001-A-5

Test Summary: PASS

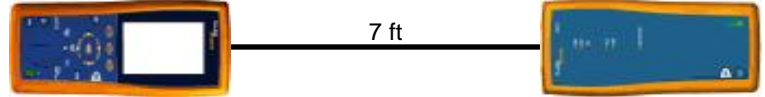
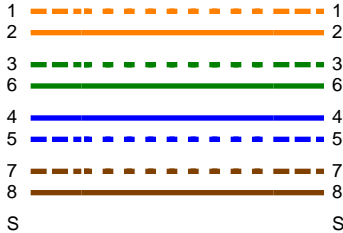
Date / Time: 01/06/2012 09:32:23am
 Headroom: 4.3 dB (NEXT 36-45)
 Test Limit: TIA Patch Cord Cat5e 2.0m
 Cable Type: Cat 5e UTP

Operator: Your Name
 Software Version: 2.5200
 Limits Version: 1.7000
 NVP: 69.0%

Model: DTX-1800
 Main S/N: 9385159
 Remote S/N: 9385160
 Main Adapter: DTX-PCU6M
 Remote Adapter: DTX-PCU6R

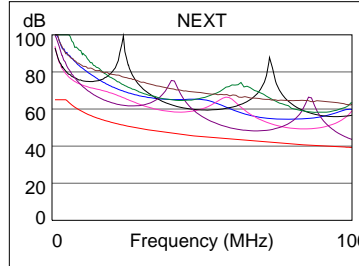
Wire Map (T568B)

PASS

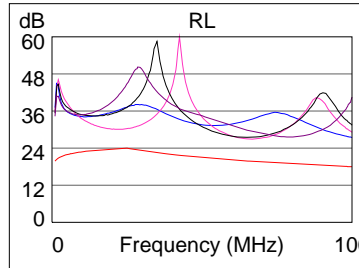


Length (ft)	[Pair 12]	7
Prop. Delay (ns)	[Pair 36]	11
Delay Skew (ns)	[Pair 36]	1
Resistance (ohms)	[Pair 12]	0.4

	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	36-45		36-45	
NEXT (dB)	4.3		4.3	
Freq. (MHz)	100.0		100.0	
Limit (dB)	39.3		39.3	



	MAIN	SR	MAIN	SR
	PASS			
Worst Pair	36		36	
RL (dB)	6.2		7.1	
Freq. (MHz)	22.4		66.3	
Limit (dB)	23.9		19.8	





L-Com Inc

Test report number 100608092CRT-001
January 6, 2012

Appendix B

Test results for part number UCA5-07-BL

This appendix contains 5 pages.



Cable ID: 100608092CRT-001-B-1

Test Summary: FAIL

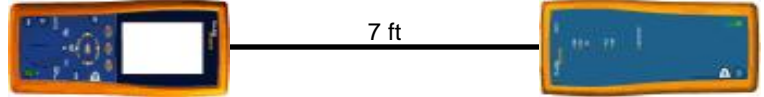
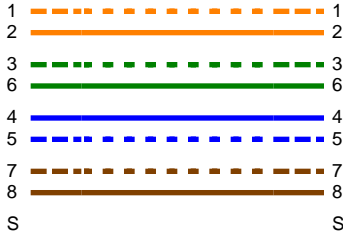
Date / Time: 01/06/2012 09:33:49am
Headroom: 4.9 dB (NEXT 36-45)
Test Limit: TIA Patch Cord Cat5e 2.0m
 Cable Type: Cat 5e UTP

Operator: Your Name
 Software Version: 2.5200
 Limits Version: 1.7000
 NVP: 69.0%

Model: DTX-1800
 Main S/N: 9385159
 Remote S/N: 9385160
 Main Adapter: DTX-PCU6M
 Remote Adapter: DTX-PCU6R

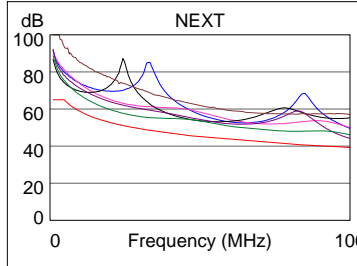
Wire Map (T568B)

PASS

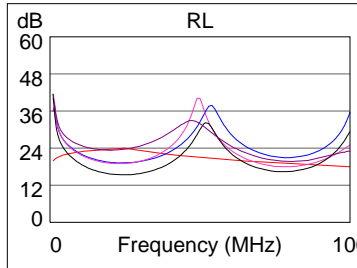


Length (ft)	[Pair 78]	7
Prop. Delay (ns)	[Pair 12]	11
Delay Skew (ns)	[Pair 12]	1
Resistance (ohms)	[Pair 12]	1.6

	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	36-45		36-45	
NEXT (dB)	4.9		4.9	
Freq. (MHz)	100.0		100.0	
Limit (dB)	39.3		39.3	



	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
FAIL				
Worst Pair	45		45	
RL (dB)	-8.7 F		-8.7	
Freq. (MHz)	24.1		24.1	
Limit (dB)	24.0		24.0	





Cable ID: 100608092CRT-001-B-2

Test Summary: FAIL

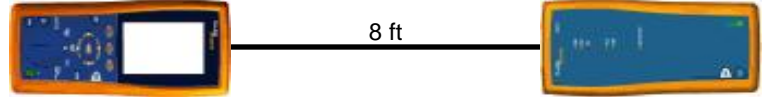
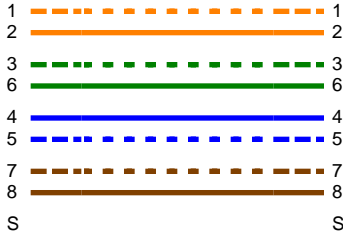
Date / Time: 01/06/2012 09:55:16am
 Headroom: 4.3 dB (NEXT 12-45)
 Test Limit: TIA Patch Cord Cat5e 2.0m
 Cable Type: Cat 5e UTP

Operator: Your Name
 Software Version: 2.5200
 Limits Version: 1.7000
 NVP: 69.0%

Model: DTX-1800
 Main S/N: 9385159
 Remote S/N: 9385160
 Main Adapter: DTX-PCU6M
 Remote Adapter: DTX-PCU6R

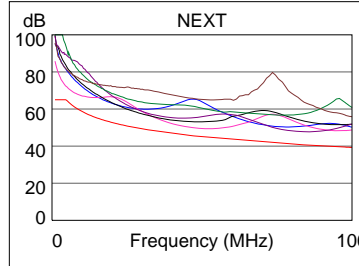
Wire Map (T568B)

PASS

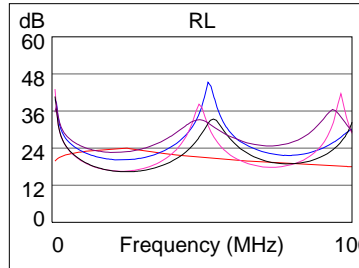


Length (ft)	[Pair 12]	8
Prop. Delay (ns)	[Pair 12]	11
Delay Skew (ns)	[Pair 12]	0
Resistance (ohms)	[Pair 78]	1.6

	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	12-45		36-45	
NEXT (dB)	4.3		7.0	
Freq. (MHz)	47.0		84.5	
Limit (dB)	45.6		40.7	



	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
FAIL				
Worst Pair	45		45	
RL (dB)	-7.7 F		-7.7	
Freq. (MHz)	24.4		24.4	
Limit (dB)	24.0		24.0	





Cable ID: 100608092CRT-001-B-3

Test Summary: FAIL

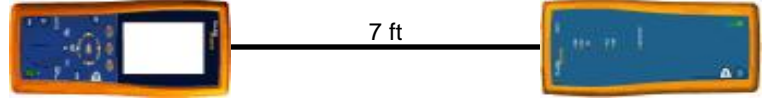
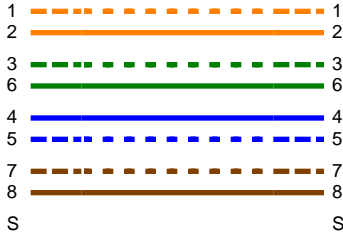
Date / Time: 01/06/2012 09:56:52am
 Headroom: 4.7 dB (NEXT 12-36)
 Test Limit: TIA Patch Cord Cat5e 2.0m
 Cable Type: Cat 5e UTP

Operator: Your Name
 Software Version: 2.5200
 Limits Version: 1.7000
 NVP: 69.0%

Model: DTX-1800
 Main S/N: 9385159
 Remote S/N: 9385160
 Main Adapter: DTX-PCU6M
 Remote Adapter: DTX-PCU6R

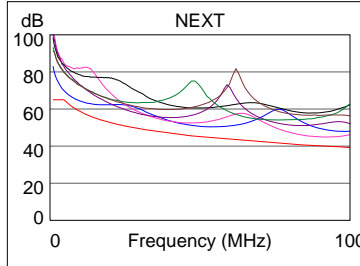
Wire Map (T568B)

PASS

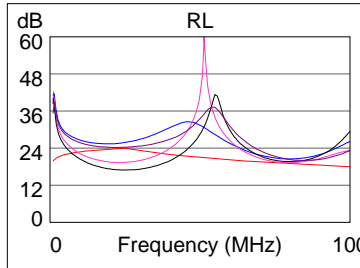


Length (ft)	[Pair 12]	7
Prop. Delay (ns)	[Pair 45]	11
Delay Skew (ns)	[Pair 45]	1
Resistance (ohms)	[Pair 78]	1.7

	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	12-36		12-45	
NEXT (dB)	4.7		4.8	
Freq. (MHz)	4.8		90.3	
Limit (dB)	65.0		40.1	



	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
FAIL				
Worst Pair	45		45	
RL (dB)	-7.1 F		-7.0	
Freq. (MHz)	24.1		23.1	
Limit (dB)	24.0		23.9	





Cable ID: 100608092CRT-001-B-4

Test Summary: FAIL

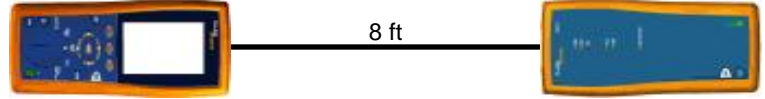
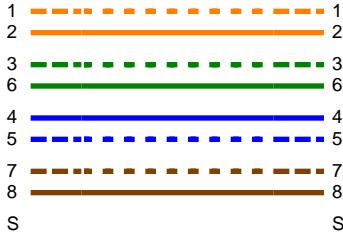
Date / Time: 01/06/2012 09:58:16am
 Headroom: 2.9 dB (NEXT 12-45)
 Test Limit: TIA Patch Cord Cat5e 2.0m
 Cable Type: Cat 5e UTP

Operator: Your Name
 Software Version: 2.5200
 Limits Version: 1.7000
 NVP: 69.0%

Model: DTX-1800
 Main S/N: 9385159
 Remote S/N: 9385160
 Main Adapter: DTX-PCU6M
 Remote Adapter: DTX-PCU6R

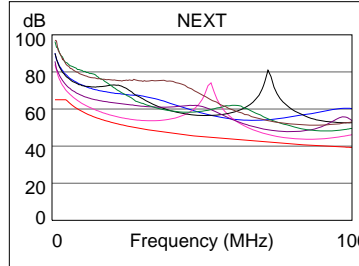
Wire Map (T568B)

PASS

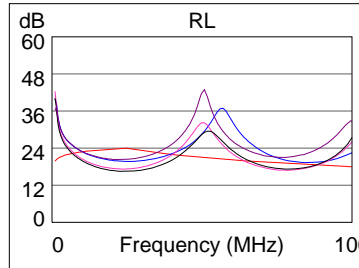


Length (ft)	[Pair 12]	8
Prop. Delay (ns)	[Pair 12]	11
Delay Skew (ns)	[Pair 12]	0
Resistance (ohms)	[Pair 45]	1.8

	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	12-45		12-45	
NEXT (dB)	2.9		3.0	
Freq. (MHz)	81.5		84.5	
Limit (dB)	41.0		40.7	



	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
FAIL				
Worst Pair	45		45	
RL (dB)	-7.5 F		-7.3	
Freq. (MHz)	24.1		22.1	
Limit (dB)	24.0		23.8	





Cable ID: 100608092CRT-001-B-5

Test Summary: FAIL

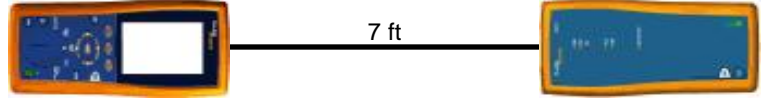
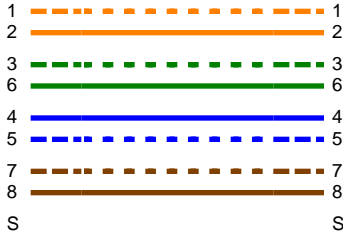
Date / Time: 01/06/2012 10:00:20am
Headroom: 3.7 dB (NEXT 36-45)
Test Limit: TIA Patch Cord Cat5e 2.0m
 Cable Type: Cat 5e UTP

Operator: Your Name
 Software Version: 2.5200
 Limits Version: 1.7000
 NVP: 69.0%

Model: DTX-1800
 Main S/N: 9385159
 Remote S/N: 9385160
 Main Adapter: DTX-PCU6M
 Remote Adapter: DTX-PCU6R

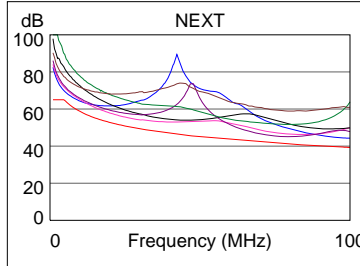
Wire Map (T568B)

PASS



Length (ft)	[Pair 45]	7
Prop. Delay (ns)	[Pair 12]	11
Delay Skew (ns)	[Pair 12]	1
Resistance (ohms)	[Pair 12]	1.7

	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
PASS				
Worst Pair	36-45		12-36	
NEXT (dB)	3.7		4.9	
Freq. (MHz)	76.8		98.8	
Limit (dB)	41.5		39.4	



	Worst Case Margin		Worst Case Value	
	MAIN	SR	MAIN	SR
FAIL				
Worst Pair	36		36	
RL (dB)	-6.5 F		-6.4	
Freq. (MHz)	24.1		23.4	
Limit (dB)	24.0		23.9	

