

## HOW DO I KNOW IF THE CABLING FIRM I AM TALKING WITH IS REALLY QUALIFIED?

### Wire is Wire

Anybody can install it, right? Just about anyone can run wire but a proper installation by a trained installer allows your technology investment to work at its full potential!

### Cabling is an Investment

Tele/data cabling is a long-term investment and regardless of the size of your firm, a poorly installed cabling system will over time negatively impact your use of technology. Unfortunately, the problem is often discovered months-and sometimes even years-later when your network support person turns to you and says "Hmm, maybe the reason for the network problems is the wiring." Now what do you do? Find someone to verify this? Who will repair it? Then the magical question, "Do I need to rewire?"

**Avoid wiring problems by verifying that the cabling vendor you are considering is truly qualified.**

Do not assume that the vendor you are talking with will do the cabling correctly. Review the facts that will determine if your vendor is qualified.

### Ask the Right Questions

Here are a few questions (and answers) to ask your potential cabling vendor to see if they are truly qualified. **A qualified vendor will be able to answer them on the spot.** If they need to get back to you, then you should be leery.

### Q & A

**Q.** What cabling solution manufacturers does the vendor offer?

**A.** A quality vendor will offer at least 3 solutions. Below are the names of some quality manufacturers:

- Hubbell Premise Wiring Systems
- ICC Structured Cabling
- Leviton Voice & Data Solutions
- Ortronics System
- Panduit Corp.
- Systimax – CommScope Systems
- Siemon Company

**Q.** Are the technicians who will be performing my cable installation trained by the manufacturer of the cabling solution that you are quoting?

**A.** The answer should be "yes." This training is very important because without it, you - the customer-have no assurance that the vendor knows how to design and install a high-speed cabling system.

In addition, without certification you will not have the manufacturer's support in the event that there is a problem.

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### What Can Go Wrong With Wire?

You may think, “What can go wrong with wiring?” There are many things that can hinder the performance. Consider this analogy. Imagine a 6 foot piece of saltwater taffy resting between two sawhorses with nothing in the middle, like a suspended bridge. Now let's picture what happens when the temperature rises. The taffy begins to sag and stretch, right? Well copper wire is similar when installed above the ceiling tile where the temperature greatly fluctuates during the constantly changing seasons. When installed incorrectly, heat will cause it to stretch and sag just like the saltwater taffy, stressing it to the point that it will fail to operate. A proper installation accounts for temperature and other factors that impact the cabling so that it

is not jeopardized over time. The real problem with incorrect installation is that with time the problems begin to occur—long after your vendor is gone and the standard warranty has expired.

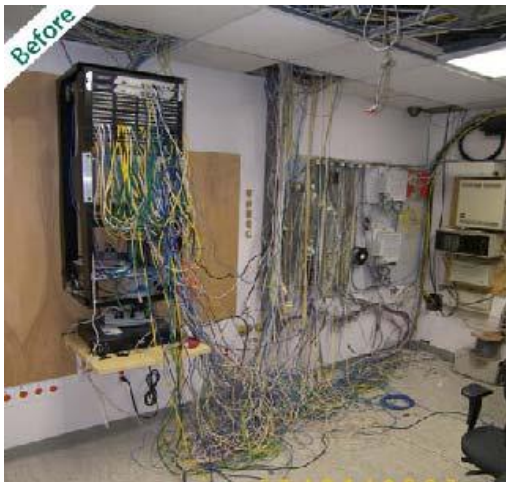
### What's Wrong With This Picture?

This picture is of a new data room installation completed in 2009. The client received three cabling bids and selected what they thought was the best the vendor.

Unfortunately, they did not properly qualify the vendor and, as you can see, they were left with a very messy and unreliable solution.



## Before and After Picture Completed By Breninger Communications



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### Q & A

Q. At the completion of the cable installation does the vendor perform one or more of the following tests on each and every one of the newly installed cables?

- Channel Test
- Basic Link Test
- Permanent Link Test

A. The answer must be “yes.” Without the completion of one or more of the above tests, there is no way that a vendor can guarantee that the installed cabling system meets the current TIA/IEEE standards. In other words, that it will be able to support your current and future technology demands.

Q. Does the vendor provide you with a printed certification report for **each** and **every one** of the installed tested cables?

A. The answer should be “yes.” This is how you the customer know that the newly installed cabling system was done correctly, meets the TIA/IEEE standards and will be able to support your current and future technology needs.

**Sample Report is Attached.**

Q. Is the technician who will be performing the certification tests trained by the testing tool manufacturer to ensure that the test is properly administered and that the test results are interpreted correctly?

A. Again, the answer should be “yes.” They should be able to offer you a training certificate indicating a technician’s level of education. One of the most respected certificates is the CCTT (Certified Cable Testing Technician) degree by Fluke Networks. This comprehensive program ensures the technician knows how to properly test any copper or fiber optic cabling system.

Q. Does the vendor have pictures that demonstrate the quality of their work?

A. If the vendor is quality, they will be proud to show you their completed work. It will also provide you with an idea of what you can expect from your installation.

Q. Is the vendor providing an extended Manufacturer Supported Performance Warranty (MSPW)?

A. Finally, the answer should be “yes.” This is the icing on the cake! In order for a vendor to be able to offer this type of performance warranty means that they have met the stringent requirements set forth by the cable manufacturer. Depending on the manufacturer, this warranty is available in 10, 25 and 30-year programs through qualified dealers.



## Cable ID: D-35

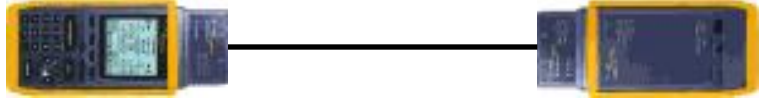
## Test Summary: PASS

Date / Time: 03/03/2004 02:57:00pm  
**Headroom: 4.3 dB (NEXT 36-45)**  
**Test Limit: Cat5 Link TSB95**  
 Cable Type: Cat 5E UTP

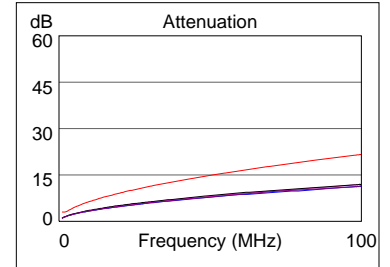
Operator: Breninger Comm.  
 Software Version: V06.11  
 NVP: 72%

Model: OMNIScanner2  
 Main S/N: 50D99L00429  
 Remote S/N: 50E99L00154  
 Main Adapter: MOD-8  
 Remote Adapter: MOD-8

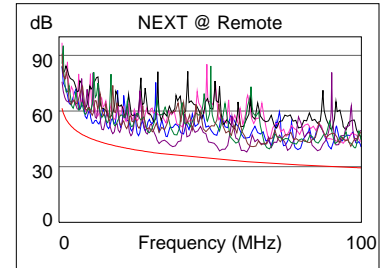
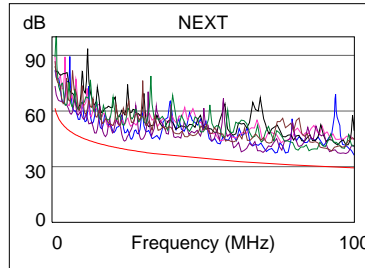
Wire Map	Expected	Actual
<b>PASS</b>		
Omni:	12345678	12345678
Remote:	12345678	12345678



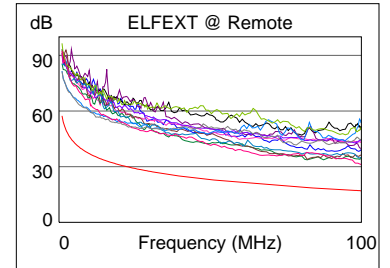
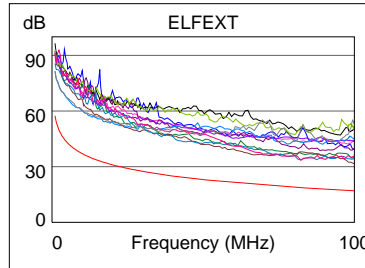
Length (ft), Limit 308	[Pair 78]	191
Prop. Delay (ns), Limit 518	[Pair 36]	275
Delay Skew (ns), Limit 45		5
Resistance (ohms)		N/A
Attenuation (dB)	[Pair 45]	9.6
Frequency (MHz)	[Pair 45]	99.4
Limit (dB)	[Pair 45]	21.6



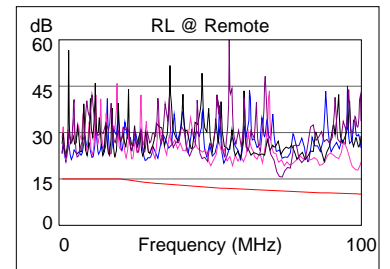
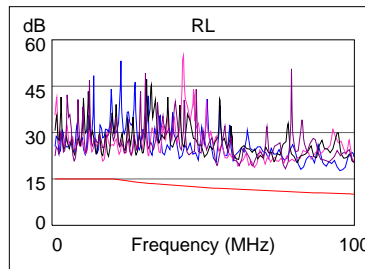
<b>PASS</b>	Worst Case Margin	
	MAIN	SR
Worst Pair	36-45	36-45
<b>NEXT (dB)</b>	4.3	4.4
Freq. (MHz)	23.9	37.8
Limit (dB)	39.5	36.2



<b>PASS</b>	MAIN		SR	
	Worst Pair	36-78	78-36	
<b>ELFEXT (dB)</b>	14.7	14.1		
Freq. (MHz)	99.9	99.9		
Limit (dB)	17.0	17.1		
Worst Pair	36	36		
<b>PSELFEXT (dB)</b>	14.6	14.8		
Freq. (MHz)	82.3	99.2		
Limit (dB)	16.1	14.5		



<b>PASS</b>	MAIN		SR	
	Worst Pair	36	78	
<b>RL (dB)</b>	5.6	4.3		
Freq. (MHz)	16.9	73.4		
Limit (dB)	15.0	11.1		



# Sample Report



## Cable ID: D-36

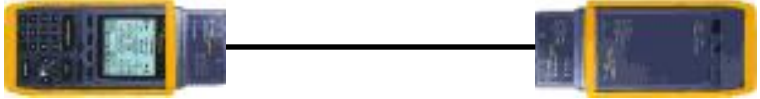
## Test Summary: PASS

Date / Time: 03/03/2004 03:00:00pm  
**Headroom: 3.4 dB (NEXT 36-45)**  
**Test Limit: Cat5 Link TSB95**  
 Cable Type: Cat 5E UTP

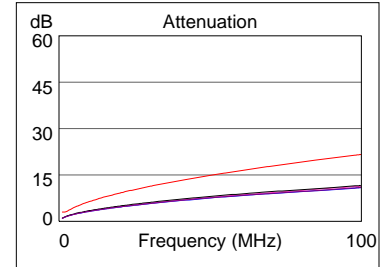
Operator: Breninger Comm.  
 Software Version: V06.11  
 NVP: 72%

Model: OMNIScanner2  
 Main S/N: 50D99L00429  
 Remote S/N: 50E99L00154  
 Main Adapter: MOD-8  
 Remote Adapter: MOD-8

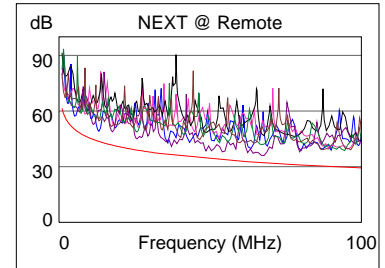
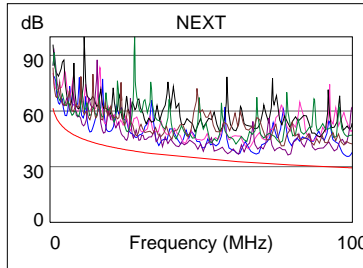
Wire Map	Expected	Actual
<b>PASS</b>		
Omni:	12345678	12345678
Remote:	12345678	12345678



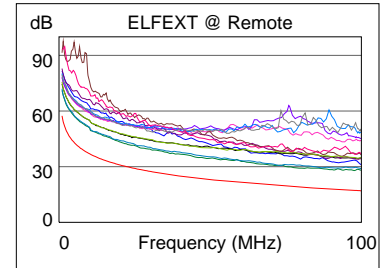
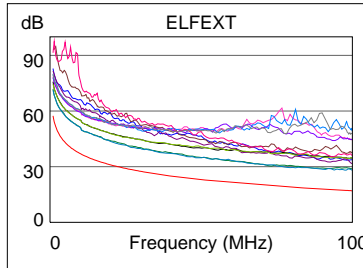
Length (ft), Limit 308	[Pair 78]	186
Prop. Delay (ns), Limit 518	[Pair 36]	270
Delay Skew (ns), Limit 45		7
Resistance (ohms)		N/A
Attenuation (dB)	[Pair 45]	10.0
Frequency (MHz)	[Pair 45]	99.4
Limit (dB)	[Pair 45]	21.6



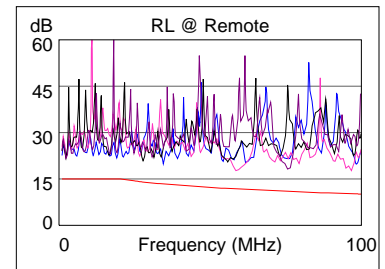
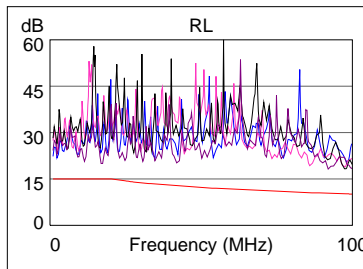
<b>PASS</b>	Worst Case Margin	
	MAIN	SR
Worst Pair	36-45	36-45
<b>NEXT (dB)</b>	3.4	3.6
Freq. (MHz)	62.1	54.5
Limit (dB)	32.8	33.7



<b>PASS</b>	MAIN		SR	
	Worst Pair	45-36	36-45	
<b>ELFEXT (dB)</b>	10.3	10.0		
Freq. (MHz)	79.2	79.2		
Limit (dB)	19.1	19.1		
Worst Pair	36	36		
<b>PSELFEXT (dB)</b>	11.7	12.0		
Freq. (MHz)	93.6	92.2		
Limit (dB)	15.0	15.2		



<b>PASS</b>	MAIN		SR	
	Worst Pair	78	36	
<b>RL (dB)</b>	4.7	6.0		
Freq. (MHz)	17.2	58.8		
Limit (dB)	15.0	11.7		



# Sample Report