

25 Year System Guarantee

Network Sciences  
**HellermannTyton**

Network Sciences represents our increased level of support for enhanced HellermannTyton Structured Cabling Systems.

It reassures specifiers and end users that every HellermannTyton System installed under the Network Sciences banner is fully guaranteed to meet or exceed the industry's latest performance standards, including products, installation and testing.

## Manufacturers Responsibilities

The most important aspect of any guarantee is a defined point of responsibility, where that party is contracted to correct problems, should they occur, during the period of that guarantee. HellermannTyton, manufacturers of the interconnectivity hardware and verifiers of cable performance, are responsible for the performance of the component parts of the system hardware.

It is our responsibility to ensure that all products perform to the standard to which they were specified. We, as a company, can be relied upon to resolve system performance problems with respect to the cabling infrastructure and ensure that all system integrators are trained to meet our high standards of installation.

### **Audited 25 year Guarantee**

In cases where a client requires the "Audited Guarantee", HellermannTyton will visit the site, collate the test results and inspect the work to verify that the installation has been carried out to a high standard and conforms with Network Sciences guidelines.

### **Self-Certified 25 year Guarantee**

Where the self-certified route is chosen then HellermannTyton's responsibility is to review all test results and photographic evidence sent in by the system integrators in order to verify that the information provided confirms all circuits perform to the latest ratified and draft National and International standards for the system performance chosen. If all circuits do conform, then a report and guarantee will be issued.



## Typical Questions and our response

HellermannTyton has acquired considerable knowledge of structured cabling gained through many years of operating guaranteed cabling packages. Both HellermannTyton and our Distributors know what their customers require to provide a future proof network. Our product options offer our customers unrestricted solutions allowing bespoke system configurations to be used when necessary. The Network Sciences product choice will enable the user to select the correct system to suit their needs and in doing so be reassured by the following Question and Answers section. The answers put forward are based on actual experience gained in the administration of guaranteed cabling systems, since 1992, and we challenge you to ask our competitors these same questions.

1. **Q. What is meant by a “Guaranteed Structured Cabling System”?**  
A. A Guaranteed Structured Cabling System is an installation that has been installed by trained personnel, has been tested for confirmation of standards compliance and is registered and guaranteed for a set period of time by the product manufacturers.
2. **Q. How do we ensure that it means something?**  
A. We ensure that it means something by recording each circuits' performance and verifying that high standards of installation practice have been maintained. The guaranteed network is then supported by engineers, who are available at short notice, to resolve any problems that may occur.
3. **Q. What do I do to claim?**  
A. If a problem occurs and assistance is required then a set procedure is documented for action. If HellermannTyton confirm that the product is responsible for the problem, then either our engineers will replace the product or we will pay for the work to be carried out by a HellermannTyton Network Sciences Installer.
4. **Q. What can't I claim for under the guarantee?**  
A. Claims under the guarantee are basically possible for:
  - i. Cost of work to find the problem.
  - ii. Replacement or repair of faulty items.
  - ii. Cost of work to re-install.

You cannot claim for consequential or indirect losses such as system down time, lost profits or failed processes. Work to find a problem and re-install failed product will usually be done by HellermannTyton engineers, but may be completed by a HellermannTyton Network Sciences Installer by prior arrangement.

Maximum liability of HellermannTyton shall not exceed replacement value in respect of the products for which the Guarantee is claimed.
5. **Q. Who puts the problems right?**  
A. Any problems that occur in the cabling network must be reported to the installer in the first instance. HellermannTyton are available if the problem proves to be difficult to solve and we will arrange for the test engineer to visit the site location and liaise with the installer. If this does not resolve the problem then HellermannTyton will visit the site and repair the problem. Please note that if the problem does not relate to hardware or cable failure then charges incurred by HellermannTyton will be passed on.
6. **Q. What happens if the System provider goes out of business?**  
A. If your system installer goes out of business after registration and completion of the site, then HellermannTyton will take responsibility for the site and you can call our engineers direct for assistance. In cases where a different installer to the one who carried out the initial work is being used, then it may be possible for HellermannTyton to work with them to resolve any issues.
7. **Q. Who can I talk to about future requirements?**  
A. If you have further requirements for Network Sciences or need to discuss your future requirements, then one of our Distributors or HellermannTyton are at your disposal for advice and assistance, whether of a marketing or technical nature. HellermannTyton keep lists of approved installers and their backgrounds, should you require a change of installer.
8. **Q. Does the installer have any 'Clout' with the manufacturer?**  
A. HellermannTyton and our Master Distributors work closely with our system integrators and know many of the project engineers on a personal basis. This leads to an open door policy ensuring that the requirements of our installers are closely monitored and any problems resolved quickly.

*Continued on pages 4-5.*

9. **Q. Can the network be guaranteed after the owners cease to exist? What if the building changes hands?**
- A. Any changes in leasing, tenancy or rented space (or even owned premises) where Network Sciences has been installed would be covered, providing that the site has been registered and guaranteed by HellermannTyton. It is however a good policy to have the network retested to ensure that the previous owner has not invalidated the guarantee by unauthorised changes.
10. **Q. What if the hardware fails to support new protocols?**
- A. If the hardware fails to support new protocols HellermannTyton will investigate the problem. If it is determined that the protocol is not designed to run over the installed solution, then the guarantee will not cover the problem. We will however try to advise you on what changes will be necessary or costs incurred if you do require this protocol to run on your network.
11. **Q. What if a legal claim arises from bad workmanship on the installation?**
- A. If you are dissatisfied with the workmanship of a Network Sciences integrator then this work will be rejected prior to site handover and so the position of legal involvement should never occur. It should be pointed out that no system will be guaranteed by HellermannTyton until we are satisfied that the workmanship is up to our strict standards.
12. **Q. Can a network be re-certified after changes?**
- A. If changes are made to the network then HellermannTyton must be notified. If a significant number of changes are to be made, then we may insist that a visit is made and the circuits are re-tested prior to the maintenance of any 25 year guarantee.
13. **Q. Is there any pre-tender or sales support for installation companies?**
- A. Yes on request when accompanied by the relevant form, which can be found on the Network Sciences Administration CD.
14. **Q. What technical support is available?**
- A. HellermannTyton have dedicated Network Sciences engineers available for problem solving or technical questions relating to our products use. We have all the necessary test equipment to help resolve any cabling problem that an end-user could conceivably meet, including a full range of E.M.C. test equipment.
15. **Q. What are the hidden costs of guarantees?**
- A. There are no hidden costs with the Guarantee.
16. **Q. Are guarantees necessary?**
- A. Guarantees are most definitely necessary. Without some form of control and certification policy for your networks, standards would fall and problems relating to installation practice would occur. We know this is the case because prior to 1992, when no checks were made in installations, many problems were experienced by end-users with poorly installed networks.
17. **Q. What is the response time to call out?**
- A. HellermannTyton will ensure that problems, which are our responsibility or the installers, are resolved quickly (normally we would expect our test engineers to be on site within 48 hours of notification, if they cannot resolve the problem under our guidance then we would go to site). It may be necessary on occasions to make more than one visit to site to resolve particularly difficult problems due to electromagnetic interference.
18. **Q. What is the criteria for training?**
- A. All registered installers must send key personnel on a HellermannTyton training course or to a free half-day refresher course if proof can be offered that the company has a previous training record on HellermannTyton product. Non HellermannTyton trained personnel must always attend our full day's training course. Trained personnel must be present on any Network Sciences installation.

19. **Q. Can the end user be trained?**
- A. Training courses are held at HellermannTyton most weeks for both installers and end-user clients. We also provide courses at various locations around the world at the request of our Distributors. Places on these courses may be booked and purchased from either our Distributors or HellermannTyton. The course content covers installation practices, the testing of cable link and channel plus general issues relating to performance standards and safety.
20. **Q. Why are there so many conflicting standards?**
- A. The standards relating to cabling are not conflicting to the trained observer but can appear so to the layman. HellermannTyton try to simplify the relevant standards by way of explanation in our documentation (see See Standards Overview). Basically there are two standards bodies in the World, one in America and the other international. They differ in some areas but concur in many.
21. **Q. Is the fibre-optic backbone covered under the 25 year guarantee?**
- A. If the installer uses HellermannTyton's fibre panels, cable and connectors and can provide HellermannTyton OTDR test results for links or uses HellermannTyton personnel to terminate and test a site, then a full 25 year guarantee will be issued by Network Sciences. Fibre-optic installations may also be covered by a maintenance agreement.
22. **Q. What products are covered by Network Sciences?**
- A. Category 5E and beyond. Category 5 can be covered but HellermannTyton is moving to a minimum of C5E status on its products.
23. **Q. Should the products be CE marked?**
- A. The answer to the question, "Should passive cabling products be CE marked?" is straight forward. NO! However, when they integrate with an active system then they should comply. This is a complex scenario, and HellermannTyton have addressed it by obtaining all the necessary test equipment to conduct E.M.C. tests on our products in order to verify that our cabling systems do not violate the law when connected to CE compliant electronic data equipment.
24. **Q. Are the products independently tested?**
- A. Yes by either Delta, the British Standards Institute (BSI) or ERA Technology. All are approved test houses for structured cabling products.
25. **Q. Why Network Sciences?**
- A. The answer to this question is multifaceted and is really answered by the preceding 24 answers. This System will ensure that your network will meet all the appropriate cabling standards and support the data and telecommunications signals which you, the user, need to transmit around your network.

## 25 Year Guarantee

### **Audited 25 year Guarantee**

Under this Guarantee, HellermannTyton will visit the site, test the entire network or an agreed percentage thereof and inspect the work carried out, before issuing the guarantee. Hand-over documentation will be prepared with supporting photographic evidence of installation practice, with text, to comment on the competence of the installer. All HellermannTyton hand-held testers are regularly tested for comparisons to a Hewlett Packard Network analyzer. There may be a chargeable element to this service, subject to the size of the installation. Unique test software that is only available to Network Sciences integrators allows HellermannTyton to grade your site and assess the overall performance quality.

### **Self-certified 25 year Guarantee**

Under this Guarantee the installer will submit test results to HellermannTyton for approval. (A number of sites will be visited by the test engineers at their discretion throughout each year to ensure a high standard of installation is maintained at all times). A site guarantee and a 25 year certificate will be issued when we are satisfied with these test results. For a small additional fee full documentation can be provided subject to the provision of suitable material from the installer.

### **The differences at a glance**

The most significant difference in the route to the guarantee between Audited and Self-certified, is that HellermannTyton visits every site under the Audited programme. The Self-certified site gets a full test by the installer and a percentage of all the installers sites will be checked throughout each year. On audited sites, in addition to performing tests to confirm compliance with the proposed Category 5E or Category 6 standards, HellermannTyton undertakes a thorough examination of installation practices to ensure that the work has been carried out in accordance with our strict installation guidelines.



## Audited 25 Year Guarantee: Terms & Conditions

- 1 All participating installers must have attended and passed our training courses.
- 2 We insist that no fewer than two (trained) supervisors be present on each site, at any one time, when the Audited guarantee is required. This is to ensure that installation consistency is achieved.
- 3 Installations must be carried out in accordance with our time proven guidelines, as documented in our Network Sciences "Installation Guidelines".
- 4 All links must be tested by the installer with a HellermannTyton approved hand held tester, for Category 5, Category 5E\* and Category 6\* Class E performance (in accordance with the latest ratified and draft National and International standards) prior to HellermannTyton arriving on site.
- 5 HellermannTyton will visit sites as stated, re-test all or an agreed percentage of the links and thoroughly inspect installation practices for conformance to Network Sciences guidelines. HellermannTyton will then supply "hand-over" documentation together with certification confirming that the cabling network is standards compliant. This will only take place when we are satisfied that all specified criteria have been achieved.
- 6 If it appears (on site) that the installation has not been successfully completed or tested, HellermannTyton will advise the installer and arrange to re-test the site at a later date at the cost of the Installer.
- 7 After all compliance testing is complete HellermannTyton issues the guarantee. This warrants that the products will be free from defects in materials, workmanship and design and that they will meet the industry's performance standards in force at the time of installation for the duration of the 25 year guarantee period.
- 8 The Audited Guarantee provides full 25 year applications cover for all protocols designed to run on 100 MHz Category 5, 100MHz Category 5E or 200 MHz Category 6 cabling as defined by the appropriate National or International standard (whether ratified or proposed), for that bandwidth (Category 6 product is tested to 250MHz).
- 9 By way of example, *Figure 2* (page 8) lists the protocols covered. Full protocol listings are available on request.
- 10 All patch cords, baluns and adaptors used to connect the link, must be HellermannTyton product or have HellermannTyton approval for use in the system.
- 11 To gain complete channel guarantee all the installed material must be HellermannTyton products.
- 12 HellermannTyton will investigate and resolve all technical issues in relation to potential cable Link performance defects (or Channel where covered). If however, the original fault is not specific to the cabling or a factor leading to it, the cost may be passed on to the customer.
- 13 Any system faults reported, which are directly related to the manufacturers products will be repaired quickly by HellermannTyton and re-tested in the network, within 4 days.
- 14 The key area covered by the guarantee is either link or channel performance tested to the latest ratified or draft National and International standard for the performance parameters required. Channel or backbone cabling can be added if appropriate and agreed by HellermannTyton.
- 15 Any tender requiring a non-standard link configuration can be simulated and assessed for performance by HellermannTyton, prior to installation. This avoids any wasted time during the installation.
- 16 When sites have been tested and verified by HellermannTyton, additional circuits may be added to the original 25 year guaranteed network. However all relevant supporting test documentation must be supplied to HellermannTyton from the registered installer.
- 17 Any changes in tenancy or leasing of rented space, where an existing Network Sciences installation is installed, will be covered as a 25 year guaranteed cabling system from the original installation date. However, it is strongly recommended to have a system health check run on the network to ensure no structural damage has occurred during change of ownership.
- 18 As System guarantee ownership is placed with HellermannTyton, any subsequent changes made by any other registered Network Sciences installers can also be added to the guarantee. These changes must adhere to HellermannTyton installation and test criteria.
- 19 If it is subsequently found that not all Network Sciences installation and design directives have been met then all Guarantees will be cancelled and become void. The Guarantee shall not be applicable if the defect was caused by incorrect or negligent handling, disregard of installation procedures or of any reasonable instruction given by HellermannTyton, any abnormal use, overloading, unreasonable wear and tear or any other fault caused by your subcontractors, servants or agents.
- 20 Consequential or indirect losses, such as computer down time, lost profit or lost process time are not covered by the guarantee. Maximum liability of HellermannTyton shall not exceed replacement value in respect of products for which the Guarantee is claimed.
- 21 All repairs will be chargeable if HellermannTyton have been called in to repair or replace any defective component which has failed, outside the scope of normal wear and tear. For example, breakages caused by external elements or any other damage outside the control of HellermannTyton.
- 22 The conditions of this warranty shall be governed by and construed in accordance with the laws of England and Wales.

Figure 1.

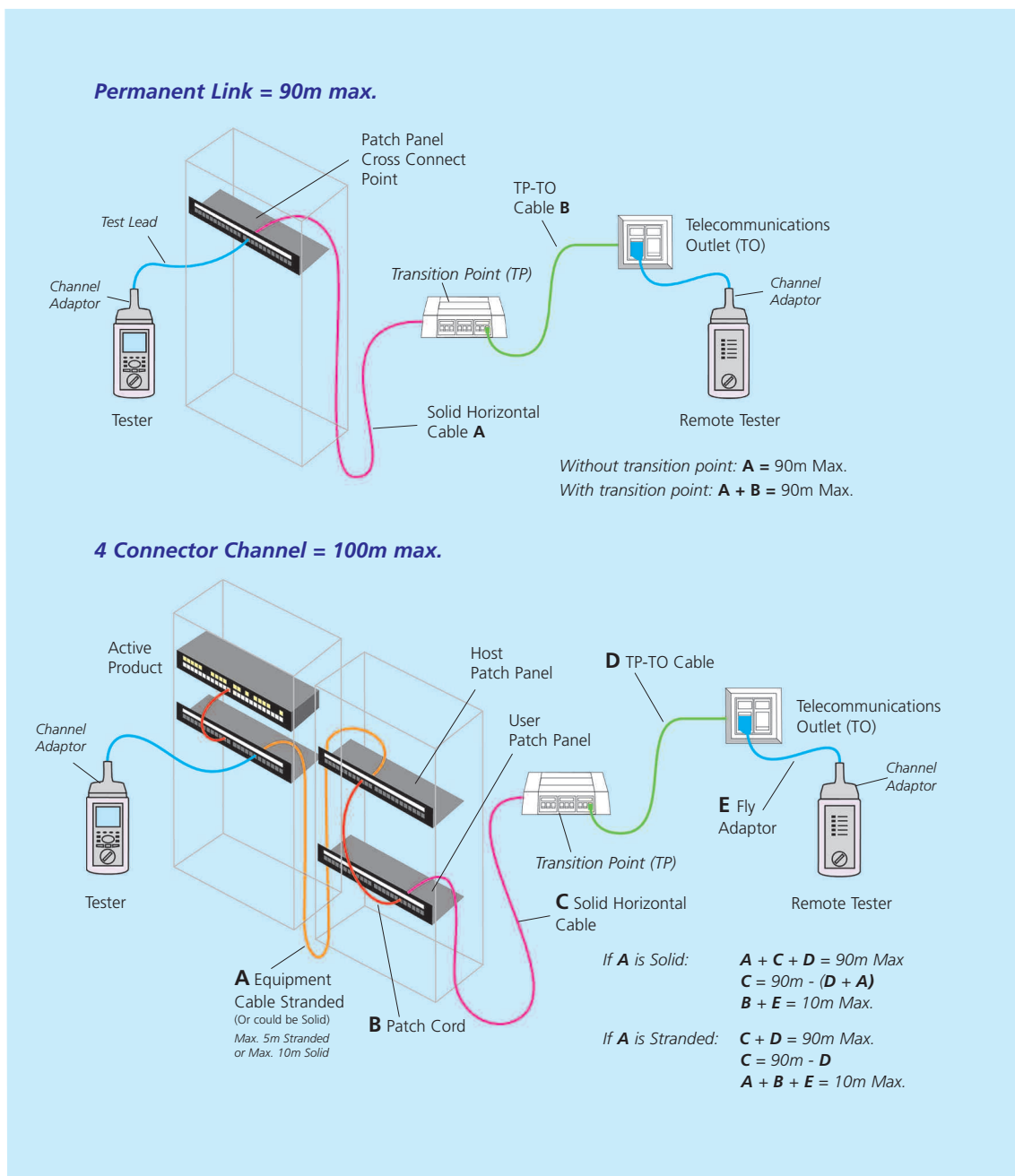


Figure 2.

<b>Protocols Supported</b>					
<b>Protocol</b>	<b>Common Pairs</b>	<b>Bit Rate</b>	<b>Bandwidth</b>	<b>Min. ACR</b>	<b>Cabling Class *</b>
Analogue Voice Systems	1	Analogue	< 1MHz	5	Category 5 (Class D)
Digital Voice Systems	2	Analogue	< 1MHz	5	Category 5 (Class D)
ISDN	1 & 3	64 Kbits	< 1MHz	5	Category 5 (Class D)
ICL	2 & 4	1 Mbits	< 16 MHz	5	Category 5 (Class D)
10BaseT	2 & 3	10 Mbits	16MHz	5	Category 5 (Class D)
4/16 Mbit Token Ring	1 & 3	4/16 Mbits	20MHz	5	Category 5 (Class D)
100BaseT	2 & 3	100 Mbits	32MHz	5	Category 5 Enhanced
100BaseT <sup>4</sup>	1, 2, 3 & 4	100 Mbits	16MHz	5	Category 5 (Class D)
155 ATM	2 & 4	155 Mbits	100MHz	5	Category 5 Enhanced
622 ATM	1, 2, 3 & 4	622 Mbits	> 100MHz	5	Category 6 (Class E)
1000BaseT (Gigabit Ethernet)	1, 2, 3 & 4	1000 Mbits	> 100MHz	5	Category 6 (Class E)
AS400	1 & 2	1 Mbits	< 16MHz	5	Category 5 (Class D)
IBM 3270	1 & 2	1 Mbits	< 16MHz	5	Category 5 (Class D)
Baseband Video Inc. CCTV, etc.	1	Analogue	< 10MHz	5	Category 5 (Class D)
Building Management Systems	1, 2, 3 & 4	Analogue	< 1MHz	5	Category 5 (Class D)

**\* Recommended Cabling Class to reliably support protocol and further enhancements of this protocol.**

## Self-certified 25 Year Guarantee: Terms & Conditions

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- 2 We insist that two trained supervisors be present on each site when the Self-certified guarantee is required. This is to ensure that installation consistency is achieved.
- 3 Installations must be carried out in accordance with our time proven guidelines, as documented in our Network Sciences "Installation Guidelines".
- 4 All links must be tested by the installer with ANSI/TIA/EIA 568-B.2-1 compliant hand held testers for Category 5, Category 5E\* or Category 6\* Class E performance in accordance with the latest ratified and draft National and International standards and as detailed in HellermannTyton's documentation. This test data should then be down loaded and transferred onto disc or Email for despatch to HellermannTyton for examination. If no failures are detected then a "Site Certification" certificate and Guarantee will be issued to the systems integrator. This warrants that the products will be free from defects in materials, workmanship and design and that they will meet the industry's performance standards in force at the time of installation for the duration of the 25 year guarantee period.
- 5 All hand held testers must be calibrated at regular intervals and be in good working order.
- 6 HellermannTyton will visit an agreed number of sites, re-test all links and present all "hand-over" documentation and certification which confirms the cabling network is standards compliant. This will only take place when we are satisfied that all specified criteria have been achieved.
- 7 The Self-certified Guarantee provides full 25 year applications cover for all protocols designed to run on 100 MHz Category 5, 100MHz Category 5E or 200 MHz Category 6 cabling as defined by the appropriate National or International standard (whether ratified or proposed), for that bandwidth (Category 6 product is tested to 250MHz).
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- 21 The conditions of this warranty shall be governed by and construed in accordance with the laws of England and Wales.

# Attestation of Conformity

*We help ideas meet the real world*



## Compliance Statement

**No. 2004-157 - Connecting Hardware, Category 6**

**Company**

HellermannTyton Data Ltd.  
43-45 Salthouse Road  
Cornwell Business Park  
Brackmills  
Northampton NN4 7EX  
England

**Product description**

RJ45 Wall Outlet characterised up to 250 MHz  
100 Ω, unshielded

**Product identification**

- Pc22200
- Pc22200SW

**Generic cabling standards, connecting hardware standards**

- ANSI/EIA/TIA-568-B.2-1
- ISO/IEC 11801 2<sup>nd</sup> edition:2002
- EN 50173-1:2002

**Technical report**

DELTA-E311853, DANAK-19J1336

This product has been tested by the EC (European Cabling) group of DELTA and complies with the electrical requirements of the above specified standards. The testing included measurement of NEXT with all the 12 test cases using test plugs characterised with the de-embedded technique as specified in ANSI/EIA/TIA-568-B.2.1. Furthermore, it complies with "Terms and conditions for use of the EC VERIFIED marking on generic cabling products", DQP 231006, version 13, 28 July 2004. The product takes part in a maintenance of qualification schedule which implies that the EC (European Cabling) group performs a quality audit of the manufacturer's production and QA sites. The maintenance testing of the product is performed on a sample basis. The certificate is valid until 6 April 2006.

Hørsholm, 6 October 2004

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