

Matrix Optical Cabling System Warranty

Issue date – July 2010

Matrix Cabling Systems (“Matrix”) provides a 25 year system performance assurance and product Warranty for telecommunications cabling systems (the “Matrix Cabling System” or “System/s”) that utilise Matrix Optical Products and Optical Qualified Cable and are designed and installed by Authorised Designers and Installers in accordance with Matrix Specifications.

1. System Performance Assurance and Performance Guarantees:

A. Assurance:

After the installation is complete, Matrix will review the installation documentation to determine conformity with Matrix Specifications. Upon such determination, Matrix will issue a Registration Certificate indicating acceptance of the System. Matrix warrants that such Systems shall perform to the applicable transmission performance requirements of the "Standards" based upon 50/125 micron multimode, 62.5/125 micron multimode and singlemode optical fibre cabling type requirements (the “Standards”), along with performance margins for cables, connecting hardware and installed cabling as specified in Section 1.B. below, for a period of 25 years from the date of completed installation.

The Standards are as follows:

- ANSI/TIA/EIA-568-B.3
- ANSI/TIA/EIA-568-B.3-1
- ISO/IEC 11801 2nd Edition
- Existing and future applications approved by TIA, EIA, IEEE, ATM Forum, ANSI, IEC or ISO that specify compatibility with the type of cable installed, including applications under development or developed for use on Gigabit Ethernet (IEEE 802.3z) or OC-12c (622 Mb/s) ATM.

Maximum transmission distance guarantees will be governed by the maximum length limitations specified for the application by the standard bodies referenced above or by the distance guarantees provided in this warranty document (if longer).

B. Performance:

Horizontal Link Performance Guarantees		
	62.5/125 μ m (850nm/1300nm)	50/125 μ m (850nm/1300nm)
Max. Attenuation (db)	(850nm/1300nm)	1.82/1.59
Bandwidth (MHz-km)	200/500	500/500
Min Return Loss (db)	20	20

Notes: Horizontal Link

- a) The Horizontal Link performance includes a total of two mated pair of connectors (no Consolidation Point and no splices); the maximum cable length is 90 meters.
- b) For each additional mated pair of connectors, add the following to the attenuation values as noted in chart: 0.75 dB @ 850nm and 0.65 dB @ 1300nm (either fibre type).
- c) For each splice, add 0.30 dB to the attenuation values as noted in above chart (either fibre type, either wavelength).
- d) Bandwidth is an important performance parameter, but because it is intrinsic to the fibre and cannot be adversely affected by installation practices, it does not require testing in the field. Note that measurements for bandwidth have been performed in accordance with the procedures and overfilled launch conditions as specified within EIA/TIA-455-51 and IEC/ISO 793-1-C2A.
- e) If the attenuation is within the limits as noted in the above Horizontal Link performance chart, it is indicated that the return Loss performance of the link will be within the limits as indicated.
- f) Matrix Fibre Patchcords or pigtailed must be used to cross-connect or attach to any fibre link, otherwise applications assurance will not be covered in this warranty.

Backbone Link Performance Guarantees		
Parameter:	62.5/125 μm (850nm/1300nm)	50/125 μm (850nm/1300nm)
Max. Attenuation (db)	(850nm/1300nm)	1.82/1.59
Bandwidth (MHz-km)	200/500	500/500
Min Return Loss (db)	20	20
	Singlemode (1310nm/1550nm)	
	Inside Plant Cable	Outside Plant Cable
Max. Attenuation (db)	4.50/4.50	3.00/3.00
Min Return Loss (db)	26	
*Zero Dispersion Wavelength (nm)	1300-1324	
*Zero Dispersion Slope (nm ² -km)	<0.093	

Notes: Backbone Link

- a) The Backbone Attenuation performance as noted above is based on a length of 2000 meters for multimode and 3,000 meters for singlemode plus a total of two mated pair of connectors (zero splices), Guaranteed Transmission Distance will vary based upon published applications standards (e.g., IEEE 802.3z Gigabit Ethernet). See Transmission Distance chart below for Gigabit Ethernet transmission performance.
- b) For each additional mated pair of connectors, add the following to the attenuation values as noted in above chart: in multimode cabling (either fibre type), add 0.75 dB @ 850nm and 0.65 dB @ 1300nm; in singlemode cabling, add 0.75 dB @ 1310nm and 1550nm.
- c) For each splice, add 0.30 dB to the attenuation values as noted in above chart (applicable to both M/M and S/M).
- d) Bandwidth (multimode) and Dispersion (singlemode) are important parameters, but because they are intrinsic to the fibre and cannot be adversely affected by installation practices, they do not require testing in the field. Note that measurements for bandwidth have been performed in accordance with the procedures and overfilled launch conditions as specified within EIA/TIA-455-51 and IEC/ISO 793-1-C2A.
- e) If the attenuation is within the limits as noted in the above Backbone Link performance chart, it is indicated that the Return Loss performance of the link will be within the limits as indicated
- f) Matrix Fibre Patchcords or pigtailed must be used to cross-connect or attach to any fibre link, otherwise applications assurance will not be covered in this warranty.

Transmission Distance Guarantee			
	62.5/125 μm (850nm/1300nm)	50/125 μm (850nm/1300nm)	Singlemode (1310nm/1550nm)
Guaranteed Transmission Distance (m)	275/550	550/550	3000/3000

Notes: Guaranteed Transmission Distance

- a) The protocol pertinent to the Guaranteed Transmission Distance as noted is Gigabit Ethernet per IEEE 802.3z.

2. Products:

Matrix warrants that each of its Optical Products and Qualified Cable are, at the time of delivery to the Customer, free from defects in materials and workmanship for the duration of the warranty. Matrix shall, at its sole option, repair or replace any non-conforming Product. However, no warranty is made with respect to a Product if: (1) such Product has been repaired or altered in such a way as to affect the Product adversely; (2) such Product has been subjected to negligence, accident, misuse, abuse or improper storage; or (3) such Product was not installed in an accepted system and maintained in accordance with normal practice and in conformity with the requirements and published specifications of or designated by Matrix. A repair or replacement under this Warranty shall not extend the duration of this Warranty.

3. Moves and Changes during the Lifetime of this warranty:

Provided that any moves, additions, changes (MACs), or reductions to your System are undertaken by an Authorised Installer or Maintainer in accordance with Matrix Specifications, you can change your System during the life of this Warranty and still be assured it will exceed Standards requirements and meet specifications outlined in Section 1.B above. Failure to do so renders such MACs or reductions null and void under this Warranty. Matrix specifications require that the Authorised Installer or Maintainer prepare and forward to Matrix a completed Matrix Cabling System Change Registration Document subsequent to such administration for Matrix approval. Such approval is based upon a determination of conformity with Matrix Specifications. However, System changes that are made by way of terminated cable assemblies that do not require the use of tools or connector termination of any type (i.e. modular patch cords), may be performed by the customer without notice to Matrix provided that such changes are documented and implemented in accordance with Matrix Specifications and the Standards.

Any project with new cross-connect facilities is considered a new project and must be registered as such. You must use Matrix Optical Products (or have written authorisation from Matrix to use any products other than Matrix Products) and Optical Qualified Cable. Unauthorised products and any system failures attributable to them are not covered by this Warranty.

4. Claims Procedure:

A. Customer shall notify Matrix and the Authorised Designer and Installer in writing, using the Customer Claim Form (available upon request), within a reasonable period of time from the discovery of any defect, or of any claim whatsoever that the Customer may have with respect to the System or any Approved Products delivered hereunder. Failure to give such notice shall constitute an unqualified acceptance and waiver of all claims with respect to the System and Approved Products.

Upon receipt of notice from the Customer of a non-conforming System or Approved Product, Matrix may require that the Approved Product be returned to Matrix's designated location. Any action or claim (whether in contract or tort, including negligence) must be commenced within one year after the cause of action accrued.

B. As a result of a warranty claim, Matrix or any authorised representative it so designates may inspect such System, the Approved Product, or Customer's records relating to the System at Customer's location during reasonable business hours with 24 hours' notice.

5. Definitions:

The term "Authorised Designer and Installer" means an independent contractor who has been approved by Matrix to undertake certain work on Matrix Cabling Systems, such as the design, installation and/or maintenance of Matrix Systems. "Authorised Maintainer" means an independent contractor or organisation, which has been approved by Matrix to undertake certain maintenance work on Matrix Systems.

The term "Product" means Matrix Optical Products and Optical Qualified Cable used to connect and patch optical fibre cabling and related cable management.

The term "Matrix Specifications" means the Matrix Cabling System Training Manual provided to independent Authorised Designers, Installers and Maintainers which set forth the technical requirements for the design, installation, maintenance and administration of Matrix Cabling Systems and the use of Matrix Products, and any revisions thereto.

The term "telecommunications" shall mean any transmission, emission, or reception of signs, signals, writings, images, and sounds or information of any nature by copper or optical fibre cabling transmission systems.

The term "Qualified Cable" shall mean any cable identified by Matrix as meeting the optical requirements for use in this solution.

Permanent Link segments are used for the purpose of testing and registering the System. When not configured as a complete System, Permanent Links are covered by the Product Warranty pursuant to Section 2 of this Warranty.

The term "System" means the registered horizontal cabling channel(s) (which extend from a floor distributor to a telecommunications outlet) as well as registered backbone cabling channel(s) (which extend from a floor distributor to a building distributor or a campus distributor). The System also includes jumpers, patch cords, equipment cables and work area cables. This System definition is intended to allow additional channels (horizontal and backbone) to become part of the registered System at a later date provided they conform to Matrix Specifications and are designed, installed and maintained by an Authorised Designer and Installer (or Maintainer). Any such additional cabling channels must be registered or this Warranty is inapplicable to such additional channels. In no event shall the addition of channels extend the duration of this Warranty.

The term "Permanent Link" shall mean the portion of the System that does not include jumpers, patch cords, equipment cables or work area cables. As such, each Permanent Link is a subset of the System.

6. Limitations of this warranty:

This Warranty is exclusive and in lieu of all other warranties, whether express or implied, or statutory, including, not by way of limitation, any warranty of merchantability or fitness for a particular purpose. State law may vary the terms of this Warranty.

This Warranty does not cover damage occasioned by accidental or natural hazard, acts of god, or wilful or negligent acts of others. In no event shall Matrix be liable for consequential or incidental damages of any kind including but not limited to any and all claims, expenses, damages, losses, liabilities and all amounts paid in defence or settlement of the foregoing (including attorney's fees and expenses). Further, Matrix shall not be liable for any claims or damage arising out of or connected with this Warranty or the manufacture, sale, delivery, installation or use of any Products which exceeds the purchase price of the Products and the installation.

NOTE: No assignment is valid unless agreed to in writing by Matrix.

Write to us at:

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