Testing Guidelines-Twisted Pair

VTI SERVICES
the testing company
16 Banbury Crescent
Chipping Norton NSW 2170
Australia

Ph: 61-2-9824 2412
Fax: 61-2-9824 2415
Email: office@vti.net.au

A.B.N. 18 060 154 421

Date Issued: - 3rd December 2006

The requirements for testing are those required under the Standards and any Customer's unique requirements. This document provides guidance to the requirements of compliance testing to the standards.

Testers

- Tester performance levels must be suitable for the test undertaken and support the test undertaken to the latest Standard.
- The standards for testers are ISO/IEC AS 61935.1 and TIA/EIA-568-B.2-2
- Compliant Level IIe Testers are required to test Class D (Cat 5/Cat5e)
- Compliant Level III Testers are required to test Class E (Cat 6)
- Compliant Level IV Testers are required to test Class F (Cat 7)
- Compliant Level III Testers meet Level IIe requirements and as such can test Class D and E
- Compliant Level IV Testers meet Level IIe , Level III and IV requirements and as such can test Class D, E and F

Current approved testers for compliance testing.

Please Note: - While other testers may be available the compliance status of those testers would need to be established.

Level IIe

- Lantek LT8155T-Wavetek (Class D/Cat5e only)
- Lantek LT8100A-Wavetek (Class D/Cat5e only)

Level III

- Class D and E (Category5/5e/6) approved testers include
  - Fluke DSP4000
  - Fluke DSP4100
  - Fluke DSP4300
  - Fluke DTX1200
  - Fluke OMNIScanner2 (Previously called Microtest)
  - Lantek6
  - Lantek LT8600TSP-(Interim Compliance-awaiting confirmation from manufacturer)
  - Wirescope 350

Level IV

- Fluke DTX 1800
- Lantek7
- Wirescope Pro

Testers that are not approved for compliance testing

The following testers while unsuitable for compliance testing may be used for acceptance testing.
Some of the testers listed below are used as a method of qualifying *the cabling system to run certain network protocols.*
This testing does not test against all cabling standard compliance requirements and as such makes them unsuitable for certification and establishing of Compliance

- Fluke CableIQ
- Ideal SIGNALTEK
- LANCat System 5
- LANCat System 6
- Wirescope 150 (Class D/Cat5e only)
- PentaScanner
- Test-Um Validator

Firmware

- Firmware must be current
  - Current Firmware is freely available from manufacturers Web Sites.
  - Viewing software normally allows for upgrades of firmware of testers
  - www.wirescope.com.
  - www.idealindustries.com (Lantek-Wavetek)
  - http://www.flukenetworks.com (DTX-DSP-Omni)

Applicable Standards

- Sites shall be tested to the requirements of a current published standard and additional requirements using an appropriate tester.
- The published cabling standards include
  - ISO/IEC 11801:2003
  - AS/NZS 3080:2003
  - EIA/TIA 568B (EIA/TIA 568A and associated TSB have been withdrawn or incorporated within EIA/TIA 568B)
- The published standards for test equipment include
  - TIA/EIA-568-B.2-2
  - IEC 61935-1
  - AS/NZS IEC 61935.1:2006

Test Configuration

- All tests carried out shall be either Permanent Link or Channel Tests
  - Permanent Link Testing is preferred by most venders and end users
  - A large number of customers insist on permanent link testing- Check before testing
  - Basic link tests are **not** valid
  - If warranty is to be issued, check with cross connect manufacturer as to which tests are acceptable

Adaptors

- Test equipment manufacturers approved adaptors shall be used for all tests
    - Permanent Link Adaptors used for Permanent Link Testing
        - The fluke yellow leads for the DSP range of test equipment are basic link leads.
    - Channel adaptors used for Channel Testing
    - **Basic Link Adaptors shall not be used**
- The adaptors and or personality modules associated with the testers should match the cabling system installed
- The Performance Level of the tester adaptor shall be equal to or greater than the cabling system under test.
- PM25 or PM06 should be used for testing with fluke
    - The use of PM1, 2 and 3 can cause anomalies

Test Results

- Test Results shall be provided in a database format
    - Text, CSV or PDF test results are unacceptable
    - Plot data is not required but is highly regarded
- Failed or manipulated test results are deemed to be non compliant and fraudulent
- Test results not containing all the required tests are deemed to be non compliant
- Test results containing Marginal/Conditional passes are considered to be conditional passes
- Results shall be free of accidental or malicious manipulation
    - Test results shall not be duplicated
    - Test data shall not be altered

General Information

- The term Category 5e has been dropped under Australian and New Zealand Standards along with the International Standards (ISO/IEC11801) in favour of Category 5.
    - To avoid confusion about which performance level is required Category 5 cable is called cat5/5e or cat5:2003
    - The TIA/EIA have retained the term category 5e
- Class D Channel or Permanent Link testing under ISO/IEC11801 and AS/NZS is Category5/5e testing
- Class E Channel or Permanent Link testing under ISO/IEC11801 and AS/NZS is Category 6 testing
- Class F Channel or Permanent Link testing under ISO/IEC11801 and AS/NZS is Category 7 testing
- Class D and E testing for Permanent Link testing is easier to pass than TIA/EIA 568B

VTI Services provides professional Independent Verification, Testing and Inspection of Communication Infrastructures through innovation in research, development design and delivery of unique services and assist our clients in the protection of their investment in the Communication Infrastructure and provide credible independent expertise in Verification, Testing and Inspections.