# COMPLIANCE TESTING REPORT FOR AUSTRALIAN STANDARD AS/CA S008:2010 INCLUDING AMENDMENT NO 1/2014 REQUIREMENTS FOR CUSTOMER CABLING PRODUCTS

| | |
|---|---|
| Client: | DINTEK Electronic Limited |
| Address: | NO.8, Lane 97, WU-KONG RD.WU-KU INDUSTRIAL DISTRICT, HSIN CHUANG TAIPEI HSIEN, TAIWAN, R.O.C. |
| Report Number: | 0305DIN1101-04XXX_S008<br>*Replacing report No.: 0118DIN1401-04XXX_S008* |
| Date of Testing: | 12 December 2017 to 22 December 2017 |
| File Number: | DIN171025 |
| Product Name: | PowerMAX Cat6 Twisted Pair Cable |
| Brand Name | DINTEK Electronic |
| Product Model No: | 1101-04XXX |
| Product Description: | Category 6 Twisted Pair Cable 23AWG |
| Result: | **Complies** |
| Compiled by: | Zhimou Qin |
| Approved by: | Nina Rodoreda |
| Date of Issue | 05 March 2018 |



*** Refer to summary page for any conditions.**

# SUMMARY OF COMPLIANCE WITH AUSTRALIAN STANDARD AS/CA S008:2010 (Including Amendment No 1/2014)

The PowerMAX Cat6 Twisted Pair Cable, model number: 1101-04XXX was supplied for AS/CA S008:2010 testing by DINTEK Electronic Limited of NO.8, Lane 97, WU-KONG RD. WU-KU INDUSTRIAL DISTRICT, HSIN CHUANG TAIPEI HSIEN, TAIWAN, R.O.C.

The Equipment Under Test (EUT) consisted of a length of Cat.6 solid cable. The cable was unshielded 4 pair construction with conductors of solid copper. The nominal diameter of each conductor was 0.560 mm. The conductors were insulated with Polyethylene (PE). The jacket was made of Flame Retardant PVC. Please also refer to the photo in Appendix B and Product Specifications in Appendix C, at the rear of the report.

The EUT had the following sheath markings:
DINTEK CAT.6 U/UTP SOLID 23AWGx4P CM(UL) E190815(1166) ETL VERIFIED to ANSI/TIA-568-C.2 00303M(09/17) MADE IN TAIWAN

The requirements for labelling cable and cable products are specified in the ACMA Telecommunications Cabling (Customer Equipment and Customer Cabling) Notice.

**Note:** This report replaces report number: 0118DIN1401-04XXX_S008 with the following changes:

1. Product Model No. was changed from 1401-04XXX to 1101-04XXX.
2. Report issued date was changed from 18 January 2018 to 05 March 2018.

The PowerMAX Cat6 Twisted Pair Cable, model number: 1101-04XXX **COMPLIES** with the tested clauses of AS/CA S008:2010.

**SPECIAL CONDITIONS FOR COMPLIANCE:**
**The cable must comply with Clause 5.6.3 requirements for insulation and sheath materials.**

This cable is compliant for indoor use only.

**Possible Test Case Verdicts:**
**- test case does not apply to the test object .....N(.A)**
**- test object does meet the requirements .....P(ass)**
**- test object does not meet the requirements .....F(ail)**
**- testing was not performed.....NT**
**- noted.....ND**

| AS/CA S008:2010 | | | |
|---|---|---|---|
| Clause | Requirement - Test | Result - Remark | Verdict |
| 5. | REQUIREMENTS | | P |
| 5.1 | GENERAL<br>Cabling products shall be physically distinguishable from products used for distribution or connection of AC mains supply. | | P |
| 5.2 | MARKINGS | | P |
| 5.2.1 | Labelling Notice | | ND |
| 5.2.2 | Inappropriate markings<br>Cabling products intended solely for telecommunications use shall not bear markings indicating hazardous services. | | P |
| 5.2.3 | Additional markings (excluding cable markings) | | N |
| 5.2.3.1 | International protection (IP) rating | | N |
| 5.2.3.2 | Multidiscipline telecommunications connecting hardware | | N |
| 5.3 | UNDERGROUND CONDUIT | | N |
| 5.4 | CABLE DISTRIBUTION DEVICES | | N |
| 5.5 | OPTICAL FIBRE DISTRIBUTION DEVICES AND ENCLOSURES<br>Optical fire distribution devices and splice enclosures shall comply with AS/NZS 2211.1 | | N |

| AS/CA S008:2010 | | | |
|---|---|---|---|
| Clause | Requirement - Test | Result - Remark | Verdict |
| 5.6 | CABLES | | P |
| 5.6.1 | General<br>A customer cable shall meet the requirements of Clauses 5.6.2 to 5.6.9 where specified in Clauses 5.6.10 to 5.6.18 of this Standard. | | P |
| 5.6.2 | Conductor and optical fibre identification<br>Shall use a system of identification such that all conductors, coaxial tubes or optical fibres within the cable are readily distinguishable visually form one another. | 4 twisted pairs.<br>Pairs are identified as: Blue, Orange, Green and Brown. The matching mate in the twisted pair is white insulation with a matching coloured stripe. | P |
| 5.6.3 | Insulation and sheath material | | NT |
| | (a) shall use insulation and sheath materials suitable for telecommunications purposes; | | ND |
| | (b) Where PVC insulation or sheath materials are used, they shall comply with the requirements of Table 1 or 2, as applicable: and | | NT |
| | Table 1 - PVC Insulation Requirements<br>Tensile strength (unaged): 13 MPa<br>Elongation (unaged): 100%<br>Elongation (Aged): 50% of initial after 100C at 120h<br>Volatile Loss: 20 g/m2 after 80C aging for 120h<br>Volume Resistivity: 400GΩ m at 23C, 0.4GΩ m at 60C | | N |
| | Table 2 - PVC Sheath Requirements<br>Tensile strength (unaged): 12 MPa<br>Elongation (Unaged): 100%<br>Elongation (Aged): 50% of initial after 100C at 120h<br>Volatile Loss: 20 g/m2 after 80C aging for 120h | | NT |
| | (c) Where non-PVC insulation or sheath materials are used, they shall comply with the requirements of AS 1049 for- | | NT |
| | (i) Tensile Strength Test (Aged/Unaged); | | NT |
| | (ii) Elongation Test (Aged/Unaged); and | | NT |
| | (iii) Shrinkback Tests for that particular type of insulation and sheath. | | NT |

| AS/CA S008:2010 | | | |
|---|---|---|---|
| Clause | Requirement - Test | Result - Remark | Verdict |
| 5.6.4 | Flammability<br>A cable that is required to comply with this Clause shall pass the combustion propagation test of Method 5.6 including Appendix A and B of AS 1660.5.6. | Refer to table in Appendix A. | P |
| 5.6.5 | UV resistance<br>Requirements of AS 1049 for cables exposed to UV radiation. | | N |
| 5.6.6 | Metallic conductors | | P |
| 5.6.6.1 | Conductor composition<br>Any metallic conductors, other than copper-clad steel used as an inner conductor in coaxial cable, or copper-clad aluminium with a centre conductor greater than 2mm used as an inner conductor in coaxial cable-<br>(1) shall be either plain or plated copper;<br>(2) may be either a single, solid conductor or multi-stranded;<br>(3) the DC resistance shall be less than the values given in Table 3; and<br>(4) the conductor finish should be plain or tinned | Requirement:<br>76.53Ω/km max.<br>Measured:<br>75.98Ω/km<br><br>Solid plain copper<br>diam. = 0.56mm<br>All pairs measured and average calculated. | P |
| 5.6.6.2 | Electrical withstand voltage<br>A multi-conductor cable that is required to comply with this Clause by any of Clauses 5.6.10 to 5.6.18 of this Standard, when tested at a frequency of 50 Hz on at least 1 m length;<br>(a) shall be able to withstand the appropriate AC voltage levels and test method listed in Table 4, without breakdown for a period of 60 s or a period of 2 s as stated; and<br>(b) for Test 2 and 3, all cables/cordages shall comply to the Table 4 limits using the test specified in AS/NZS 3191 Table 2.1, test number 8(a), and using test method referred in Clause 3.5.1 of AS/NZS 1660.3. | | P |
| 5.6.6.3 | Mutual capacitance<br>(a) The maximum mutual capacitance between the two wires forming a pair measured at any frequency in the range 800 Hz to 1000 Hz shall not exceed the relevant value given in table 5.<br>(b) The measurement, referred to in Clause 5.6.6.3 (a) shall be performed on a minimum cable length of 100m<br>(c) The mutual capacitance shall be corrected to a length of 1000m | Requirement:<br>80 nF/km max.<br><br>Measured:<br>51.59 nF/km | P |

| AS/CA S008:2010 | | | |
|---|---|---|---|
| Clause | Requirement - Test | Result - Remark | Verdict |
| 5.6.6.4 | Capacitance unbalance<br>(a) The maximum capacitance unbalance between pairs measured at any frequency in the range 800 Hz to 1000 Hz shall not exceed the relevant value given in Table 5.<br>(b) During the measurement referred to in Clause 5.6.6.4 (a), all conductors, other than those under test and the metallic shield (where applicable) shall be connected to earth.<br>(c) The measurement shall be performed on a minimum cable length of 100m.<br>(d) The capacitance unbalance between two pairs of wires with one pair designated 'A' and 'B' and the second pair designated 'C' and 'D'.<br>(e) The capacitance unbalance shall be corrected to a length of 500m. | Requirement:<br>300 pF per 500m max.<br><br>Measured:<br>-67.50 pF per 500m | P |
| 5.6.6.5 | Insulation resistance<br>(a) shall not be less than the relevant value given in Table 5;<br>(b) the measurement shall be made on a minimum length of 100m of cable or cordage at a potential of 500Vd.c. ±50Vd.c. and the reading taken after the application of the voltage for 60s; and<br>(c) the insulation resistance shall be corrected to a length of 1000m. | Requirement:<br>1000 MΩ/km min<br>Measured:<br>> 1000 MΩ/km | P |
| 5.6.7 | Metallic shield<br>(a) any shield provided in the cable shall be electrically continuous; and<br>(b) Where a foil shield is employed, a drain wire shall be placed in continuous contact with the metallic surface of the shield. | | N |
| 5.6.8 | Water penetration test<br>Water Penetration specified in Clause 25, Method-F5B of IEC 60794-1-2. | | N |
| 5.6.9 | Integral bearer or strengthener | | N |
| 5.6.10 | Cable with specific attributes<br>Where a cable is claimed to have specific attributes, such as rodent or termite resistance or armouring strength, evidentiary documentation shall be made available on request to support the claim. | | N |

| AS/CA S008:2010 | | | |
|---|---|---|---|
| Clause | Requirement - Test | Result - Remark | Verdict |
| 5.6.11 | Metallic paired cable | | P |
| 5.6.11.1 | General requirements<br>Metallic paired cable, other than cordage, a cord or a special application cable, shall comply with the following Clauses: 5.6.2, 5.6.3, 5.6.4, 5.6.5, 5.6.6.1, 5.6.6.2, 5.6.6.3, 5.6.6.4, 5.6.6.5, 5.6.7, 5.6.8 and 5.6.9. | | P |
| 5.6.11.2 | Construction<br>A cable intended to carry a frequency of 300 Hz or greater shall be shielded or of twisted pair construction. | | P |
| 5.6.12 | Cordage with metallic conductors | | N |
| 5.6.13 | Cords with metallic conductors | | N |
| 5.6.14 | Metallic jumper wire and jumper cable | | N |
| 5.6.15 | Coaxial cable | | N |
| 5.6.16 | Optical fibre cable | | N |
| 5.6.17 | Blown fibre tube systems | | N |
| 5.6.18 | Special application cables | | N |
| 5.7 | CONNECTING HARDWARE, INCLUDING PLUGS AND SOCKETS OF ALL DESIGNS | | N |
| 5.8 | CABLING PRODUCTS FOR UNDERGROUND AND AERIAL INSTALLATIONS | | N |

****** END OF REPORT BODY ******

**Appendix A – Additional Test Data**
**Appendix B – Photographic Record of Sample**
**Appendix C – Product Specifications provided by the client**

## Appendix A – Additional Test Data

| 5.6.4 | TABLE: Flammability Test | P |
|---|---|---|

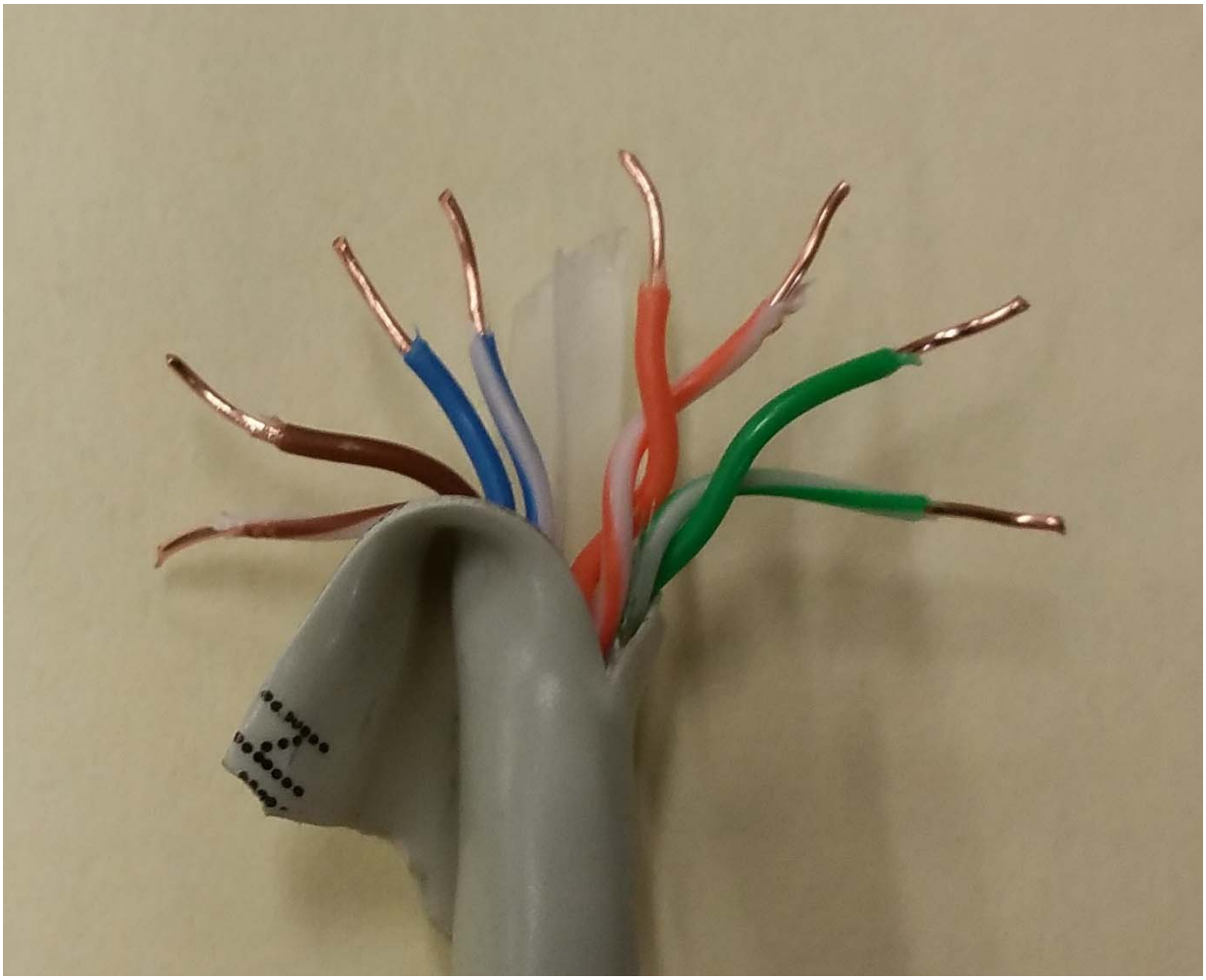
| No | Object | Duration of application of flame (S) | Time object remained alight after removal of flame (S) | Time until ignition of tissue paper (S) | Time until ignition of particle board (S) | Ignition of tissue paper | Particle board scorching | Extent of burning upwards (mm)* | Extent of burning downwards (mm)* | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CAT6 POWERMAX500 | 60 sec | 84 sec | NI | NI | NI | NI | 300 mm | 510 mm | Pass |

* Measured from lower edge of upper clamp. Start of burn was 475 mm from upper clamp. Limit for upward burn is > 50 mm and limit for downward burn is <540 mm from upper clamp (AS 1660.5.6).

| **LEGEND** | |
|---|---|
| P | Pass |
| F | Does not comply |
| NA | Not applicable |
| NI | No ignition |

**NOTE:**
**INDIVIDUAL ITEMS OF THIS TEST REPORT SHOULD NOT BE QUOTED IN ISOLATION AS PROOF OF PRODUCT ACCEPTABILITY NOR APPLIED TO DIRECTLY ASSESS PERFORMANCE UNDER CONDITIONS OTHER THAN AS ENVISAGED BY THE REFERENCE SPECIFICATION, E.G. INDIVIDUAL FIRE TESTS TO PROVE AN OVERALL ACCEPTABLE FIRE HAZARD LEVEL.**

## Appendix B – Photographic Record of Sample



## Appendix C – Product Specifications provided by the client

DINTEK LAN CABLING SYSTEMS

# PowerMAX500™

## PowerMAX500™ Cat.6 4 Pair Unshielded Solid Cable PVC


### Standards

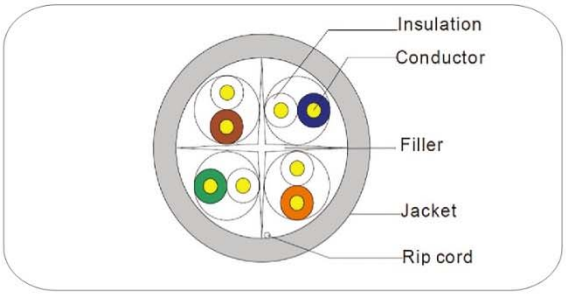
- UL, ETL Verified
- ISO/IEC11801 2nd edition
- ANSI/TIA/EIA Cabling Standard 568-C.2
- CENELEC EN 50173

### Applications

- Voice; T1; ISDN
- 10BASE-T (IEEE 802.3)
- 16Mbps Token Ring (IEEE802.5)
- 100VG-AnyLAN (IEEE802.12)
- 100BASE-T Ethernet (IEEE802.3)
- 155/622Mbps 1.2/2.4 Gbps ATM
- 1000Mbps Gigabit Ethernet
- 550MHz Broadband Video

### Compliance Approvals

- ETL Verified to ANSI/TIA-568-C.2 Category 6 - No. 11012547CRT-001
- 3P Certified ANSI/TIA-568-C.2 Category 6 Performance requirements




### Specifications

#### Wire Internal / External Characteristics

| | | |
|---|---|---|
| Conductor | Material / Size | Bare Copper / 23AWG |
| | Diameter | Nominal: 0.560 mm |
| Insulation | Material | PE |
| | Diameter | Nominal: 1.011 mm |
| | Colors | Blue/White-Blue Orange/White-Orange |
| | | Green/White-Green Brown/White-Brown |
| | Unaged Elongation | Min. 300% |
| | Unaged Tensile Strength | Min. 1.683 Kgf/mm² |
| Jacket | Material | Flame Retardant PVC |
| | Thickness | 0.5±0.02 mm |
| | Diameter | 6.0±0.2 mm |
| | Color | Assorted upon request |
| | Unaged Elongation | Min. 100% |
| | Unaged Tensile Strength | Min. 1.407 Kgf/mm² |
| | Aging at 100°C for 168Hrs | Min. elongation retention:50% |
| | | Min. tensile strength retention:75% |

#### Electrical Characteristics

| | | |
|---|---|---|
| Dielectric Strength of Insulation | | 2500 V dc / 2 seconds |
| Insulation Resistance Test | | Min. 5000 MΩ·Km |
| Conductor Resistance | | Max. 7.32 Ω/100m at 20°C |
| Resistance Unbalance | | Max. 2% |
| Capacitance Unbalance | | Max. 160 pF/100m |
| Mutual Capacitance | | Max. 5600 pF/100m |
| Impedance | 1~100MHz | 100Ω±15% |
| | 100~250MHz | 100Ω±22% |

#### Transmission Performance

| Frequency (MHz) | Insertion Loss (dB/100 meters) | | NEXT (dB/100 meters) | | Return Loss (dB/100 meters) | |
|---|---|---|---|---|---|---|
| | Per Standard | DINTEK PowerMAX500 | Per Standard | DINTEK PowerMAX500 | Per Standard | DINTEK PowerMAX500 |
| 1 MHz | 1.9* | 1.8 | 65.0* | 78.0 | 20* | 37.8 |
| 4 MHz | 3.5* | 3.0 | 64.1* | 76.0 | 23* | 36.5 |
| 10 MHz | 5.5* | 5.2 | 57.8* | 70.0 | 25* | 31.0 |
| 16 MHz | 7.0* | 6.8 | 54.6* | ` | 25* | 31.0 |
| 20 MHz | 7.9* | 7.6 | 53.1* | 64.0 | 25* | 31.0 |
| 31.25 MHz | 10.0* | 9.3 | 50.0* | 62.5 | 23.6* | 30.0 |
| 62.5 MHz | 14.4* | 13.2 | 45.1* | 60.0 | 21.5* | 30.0 |
| 100 MHz | 18.6* | 18.1 | 41.8* | 57.0 | 20.1* | 29.0 |
| 200MHz | 27.4* | 26.1 | 36.9* | 52.5 | 18* | 27.0 |
| 250MHz | 31.1* | 28.9 | 35.3* | 50.0 | 17.3* | 25.1 |
| 300 MHz | - | 31.8 | - | 46.0 | - | 23.4 |
| 400MHz | - | 36.5 | - | 43.0 | - | 21.9 |
| 500MHz | - | 41.8 | - | 42.0 | - | 20.6 |

### Ordering Information

| Part No. | Description | Cable Rating | Jacket | Std Pkg Qty |
|---|---|---|---|---|
| 1101-04441 | Cat.6 4P UTP 23 AWG Solid PVC Gray | CM | PVC | 305m Reel |

*Note: Specifications may be subject to change without any notice or obligation on the part of the manufacturer.*

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DATA SHEET
DS1101-04441