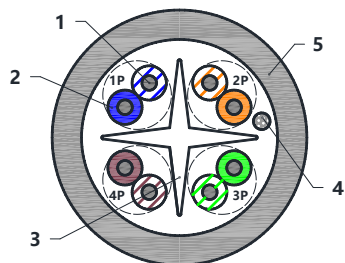


Schema



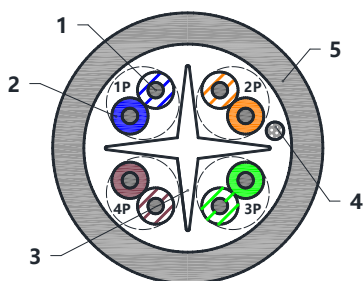
Product Description

| | |
|---|-----------------|
| ① | Inner Conductor |
| ② | Insulation |
| ③ | Cross Member |
| ④ | Ripcord |
| ⑤ | Jacket |

Construction Item Description

| Item | Property | Value | Value | |
|----------------|-------------------|-------------------|--|--|
| Conductor | Construction | AWG | 24 AWG 0.51MM(+/-0.015MM) | |
| | Material | / | Bare Solid Copper | |
| Insulation | Material | / | HDPE 8303 | |
| | Proportion | g/cm ³ | 0.97 | |
| | Outside Diameter | mm | 1.01 ± 0.01 | |
| | Average Thickness | mm | 0.22 | |
| | Color | / | / | 1p: blue stripe + white + blue stripe & blue |
| | | / | / | 2p: orange stripe + white + orange stripe & orange |
| / | | / | 3p: green stripe + white + green stripe & green | |
| / | | / | 4p: brown stripe + white + brown stripe & brown | |
| Pair Twist | Lay & Direction | / | 1p: S=18.5 mm (26%) | |
| | | / | 2p: S=15.5 mm (21%) | |
| | | / | 3p: S=20.5 mm (30%) | |
| | | / | 4p: S=14.0 mm (19%) | |
| Inner Assemble | Lay & Direction | / | S=90 ± 5 mm | |
| Filler | Ripcord | / | 300D | |
| | Cross Member | / | HDPE | |
| Outside Shield | Shield | / | / | |
| | Construction | mm | / | |
| | Material | / | / | |
| | Coverage | % | / | |
| Jacket | Material | / | PVC , Rated 60 or 75°C | |
| | Hardness | A | 81 ± 3 | |
| | Outside Diameter | mm | 6.0 ± 0.2 | |
| | Average Thickness | mm | 0.55 ~ 0.60 | |
| | Color | / | GREY | |
| | Marking Color | / | BLACK | |
| Marking | Jacket | / | Cat6 U/UTP SOLID COPPER 24AWG 4P Certified EIA/TIA 568C.2 ISO/IEC 11801 250Mhz w ww.atz.com.sg 001-305M | |

Schema



Product Description

| | |
|--------------------------|--|
| ① Inner Conductor | Composition : Solid Bare Copper (BC) |
| | Diameter : See table below |
| ② Insulation | Composition : High density Polyethylene (HDPE) |
| | Diameter : See table below |
| ③ Filler | Type of filler : Cross-Member |
| | Composition : High density Polyethylene (HDPE) |
| ④ Filler | Type of filler : Ripcord |
| | Composition : Polyester |
| ⑤ Jacket | Composition : PVC, Rated 60 or 75°C |
| | Dimensions : See table below |
| | color : GREY |

Dimensional Table

| Nb pairs | Section | Diameter of | Diameter of insulated conductor (mm) | Minimal thickness of jacket (mm) | Diameter of outer jacket (mm) |
|----------|---------|----------------------|--------------------------------------|----------------------------------|-------------------------------|
| | (AWG) | inner conductor (mm) | | | |
| 4 | 24 | NA | 1.01 ± 0.01 | 0.55 ~ 0.60 | 6.0 ± 0.2 |

Diameters of inner conductor and insulated conductor must be designed in order to reach the electrical and transmission properties of CAT6.

Color Table

| Pair No. | Conductor 1 | Conductor 2 |
|----------|---------------------------------------|-------------|
| 1 | blue stripe + white + blue stripe | Blue |
| 2 | orange stripe + white + orange stripe | Orange |
| 3 | green stripe + white + green stripe | Green |
| 4 | brown stripe + white + brown stripe | Brown |

Reference Standard

| Materials | | Fire performance | Electrical performance | Low | Zero Halogen (ZH) | | Reach regulation | RoHs Directive |
|-------------------------------|-------------------------------|--|--|---------------------------------|--|--|------------------|----------------|
| Insulation | Jacket | | | Smoke Density during combustion | Amount of Halogen acid gas during combustion | Degree of acidity (corrosivity) of gases for materials during combustion | | |
| UL444 CSA C22.2 No. 214 | UL444 CSA C22.2 No. 214 | UL 1666 (RISER CABLE FLAME TEST) | ANSI/TIA-568.2-D ISO/IEC 11801 EN 50173 IEC 61156-5 | NA | NA | NA | NA | NA |

Mechanical Properties

| Test Method | According to | | |
|------------------------|-------------------------------------|---|------------|
| | In Standard | UL444 & CSA C22.2 No. 214 | |
| | $L_0=200mm$, speed $=100mm/min$ | $L_0=20mm$, speed $=250mm/min$ (or $25mm/min$ for PE&PP insulation) | |
| | INNER CONDUCTOR | INSULATION | JACKET |
| Tensile Strength (MPa) | - | ≥ 10.5 MPa | ≥ 13.5 MPa |
| Elongation (%) | 9%~24% | ≥ 150 % | ≥ 150 % |

Thermal Properties

| | |
|----------------------------------|-------------------------|
| Operating Temperature Range (°C) | Rated 60 or 75°C |
|----------------------------------|-------------------------|



Cable Specification

Product Name: Cat 6 U/UTP 4X2X24AWG

P/N: ATZ UTP CAT6.305M.GY

Date: 30/08/2021

ALLIED ASIA RESOURCES PTE LTD

Electrical Properties

| | | |
|---|---------------------------------------|-------------------|
| Conductor Resistance at 20°C | UL 444 & CSA C22.2 No. 214 | ≤ 9.5 Ω / 100m |
| Resistance unbalance within a pair | | ≤ 2% |
| Dielectric Strength <i>Test Voltage (cd/cd): 1.00KV DC or 0.7 KV AC for 1 min</i> <i>Test Voltage (cd/screen): 1.00KV DC or 0.7 KV AC for 1 min</i> | | No breakdown |
| Insulation Resistance at 20°C after 2min of electrification under a DC voltage between 100 & 500V | | >1500 MΩ / 100m |
| Mutual capacitance | | 5600pF / 100m MAX |
| Capacitance unbalance pair to ground at 800Hz or 1 kHz | | ≤ 160 pF / 100m |
| Characteristic impedance at 100MHz | | 100 ± 15 Ω |
| Spark Test | | 2000 ± 250VOC |

Transmission Properties

| CAT 6 U/UTP | | | | | | | | | |
|-------------|-----------|-------------------|-------------------------|------------------------------|-------------------|-------------|---------------|---------------|------------------|
| No. | Frequency | Attenuation (Max) | Propagation Delay (MAX) | Propagation Delay Skew (MAX) | Return Loss (Min) | NEXT (Min) | PS NEXT (Min) | EL-FEXT (Min) | PS EL-FEXT (Min) |
| | MHz | dB/100m | ns/100m | ns/100m | dB(on 100m) | dB(on 100m) | dB(on 100m) | dB(on 100m) | dB(on 100m) |
| 1 | 4 | 3.78 | 552 | 45 | 23.01 | 66.27 | 63.27 | 55.96 | 52.96 |
| 2 | 8 | 5.32 | 546.73 | 45 | 24.52 | 61.75 | 58.75 | 49.94 | 46.94 |
| 3 | 10 | 5.95 | 545.38 | 45 | 25 | 60.3 | 57.3 | 48 | 45 |
| 4 | 16 | 7.55 | 543 | 45 | 25 | 57.24 | 54.24 | 43.92 | 40.92 |
| 5 | 20 | 8.47 | 542.05 | 45 | 25 | 55.78 | 52.78 | 41.98 | 38.98 |
| 6 | 25 | 9.51 | 541.2 | 45 | 24.32 | 54.33 | 51.33 | 40.04 | 37.04 |
| 7 | 31.25 | 10.67 | 540.44 | 45 | 23.64 | 52.88 | 49.88 | 38.1 | 35.1 |
| 8 | 50 | 13.66 | 539.09 | 45 | 22.21 | 49.82 | 46.82 | 34.02 | 31.02 |
| 9 | 62.5 | 15.38 | 538.55 | 45 | 21.54 | 48.36 | 45.36 | 32.08 | 29.08 |
| 10 | 100 | 19.8 | 537.6 | 45 | 20.11 | 45.3 | 42.3 | 28 | 25 |
| 11 | 125 | 22.36 | 537.22 | 45 | 19.43 | 43.85 | 40.85 | 26.06 | 23.06 |
| 12 | 200 | 28.98 | 536.55 | 45 | 18 | 40.78 | 37.78 | 21.98 | 18.98 |
| 13 | 250 | 32.85 | 536.28 | 45 | 17.32 | 39.33 | 36.33 | 20.04 | 17.04 |
| 14 | 350 * | 39.8 | / | 45 | 16.3 | 36.1 | 34.1 | 16.9 | 13.9 |
| 15 | 400 * | 43 | / | 45 | 15.9 | 35.3 | 33.7 | 15.7 | 12.7 |
| 16 | 450 * | 46.3 | / | 45 | 15.5 | 34.5 | 32.5 | 14.7 | 11.7 |
| 17 | 500 * | 48.9 | / | 45 | 15.2 | 33.8 | 31.8 | 13.8 | 10.8 |
| 18 | 550 * | 51.8 | / | 45 | 14.9 | 33.2 | 31.2 | 12.9 | 9.9 |

Remarks: * are the reference values.

Application

The cable must support class E applications and must be compatible POE, POE+ and UPOE.

Marking

| | |
|-------|-----------------------------------|
| Type | ink |
| Color | BLACK |
| Text | Cat6 U/UTP SOLID COPPER... |

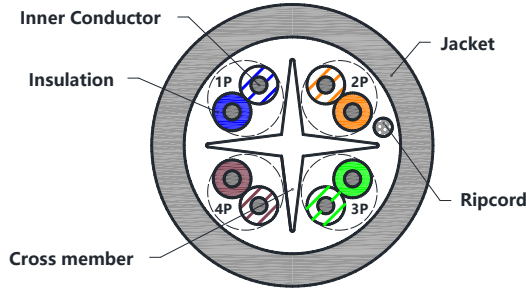
Packing

| Type of Packing | Dimension (mm) | Qt of per Packing (m) | Label Type | Cut Allowed | Tolerance Length (%) |
|-----------------|----------------|-----------------------|-------------------------------|-------------|----------------------|
| Inner Box | 400X400X215 | 305 | UL 0444 Standard Label | No | 0 |
| Master Carton | 450X415X415 | 305 | | No | 0 |

Product Design Card

Product Description : Cat 6 U/UTP 4 X 2 X 24AWG

Rev. : A ECN Description :

| Construction Item Description | | Electrical Property | | | |
|-------------------------------------|-----------------------------------|---|---|-------------------------------|---------|
| Conductor | Material | Bare Solid Copper (elongation : 19-24%) | Conductor Resistance at 20°C | ≤ 9.5 Ω / 100m | |
| | OD | 24 AWG | Resistance unbalance within a pair | ≤ 5% | |
| Insulation | Material | HDPE 8303 | Insulation Resistance at 20°C after 2min of electrification under a DC voltage between 100 & 500V | >1500 MΩ / 100m | |
| | OD | 1.01 ± 0.01 mm | Mutual capacitance | 5600 pF / 100m MAX | |
| | Average THK | 0.22 mm | Capacitance unbalance pair to ground at 800Hz or 1 kHz | ≤ 160 pF / 100m | |
| | Color | 1p: white + 2 blue stripes & blue | Characteristic impedance at 100MHz | 100 ±15 Ω | |
| | | 2p: white + 2 orange stripes & orange | Dielectric Strength Test Voltage (cd/cd,cd/screen): 1.00KV DC or 0.7 KV AC for 1 min | No breakdown | |
| 3p: white + 2 green stripes & green | Mechanical Property | | | | |
| Pair Twist | Lay & Direction | 4p: white + 2 brown stripes & brown | insulation | elongation before aging | ≥ 300% |
| | | 1p: S=18.5 mm (26%) | | tensile strength before aging | ≥12 MPa |
| | | 2p: S=15.5 mm (21%) | elongation after aging | ≥ 150 % | |
| | | 3p: S=20.5 mm (30%) | tensile strength after aging | ≥10.5 MPa | |
| | 4p: S=14.0 mm (19%) | jacket | elongation before aging | ≥ 150 % | |
| OD | / | | tensile strength before aging | ≥ 13.5 MPa | |
| Inner Assemble | Lay | S=90±5 mm | elongation after aging | ≥ 125 % | |
| | Direction | according to the drawing | tensile strength after aging | ≥ 12.5 MPa | |
| | Filler | cross member 4.8X4.8X0.5mmT | Packing | | |
| Filler | OD | / | Inner Box | 400X400X215mm | |
| | Material | Ripcord | Master Carton | 450x415x415mm | |
| Outside Shield | Construction | 300D |  | | |
| | Shield | / | | | |
| | Material | / | | | |
| | Coverage | / | | | |
| Jacket | Material | PVC, Rated 60 or 75°C | | | |
| | Hardness | 81 ±3 | | | |
| | OD | 6.0 ± 0.2 | | | |
| | Average THK | 0.55~0.60 | | | |
| | Color | GREY | | | |
| Marking Color | BLACK | | | | |
| Marking | Cat6 U/UTP SOLID COPPER... | | | | |