

STRUCTURED CABLING PRODUCTS



CAT.6A 10G UTP CABLING SYSTEM

2 - 3

CAT.6A 10G STP CABLING SYSTEM

4 - 5

CAT.6 UTP CABLING SYSTEM

6 - 11

CAT.6 FTP CABLING SYSTEM

12 - 16

CAT.5E UTP CABLING SYSTEM

17 - 21

CAT.5E FTP CABLING SYSTEM

22 - 25

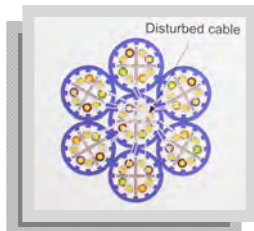
STRUCTURED CABLING ACCESSORIES

26

➤ Cat.6A 10G UTP Solid Cable

6-around-1 cable test configuration:

This test is for measuring alien crosstalk loss between pairs of adjacent cables in a 7-cable assembly consisting of the same design. Measure the ANEXT loss and AFEXT loss between each of the pairs of the disturbed cable and each pair of every disturbing cable. This will result in 96 measurements each for ANEXT loss and AFEXT loss. **Netbox 10GS Cables are under the 6-around-1 cable**



Product Feature:

- Great performance with headroom of upto 6dB
- All materials comply with ROHS standard
- Netbox 10GS LAN supports IEEE 802.3an 10G Base-T standard & TIA/EIA 568-B.2-10 DRAFT.7
- Test range from 1 to 750 MHz

Cable Data:

- 305m(1,000ft) Reel
- 23 AWG Solid Bare Copper Conductor
- 4 Pairs cabled together with a spline core separator
- Jacket: Low-smoke, flame-retardant PVC
- Outer diameter: 8.0mm
- Weight: 19 kg/305m
- Temperature Range: -20°C to +75°C

Electrical Characteristics:

- Impedence 100 +/- 15 ohms (10-550MHz)
- DC resistance, unbalance of a pair: 3% Max
- Capacitance unbalance (pair to ground): 330pF/100M Max
- Propagation delay skew: 25nS/100M

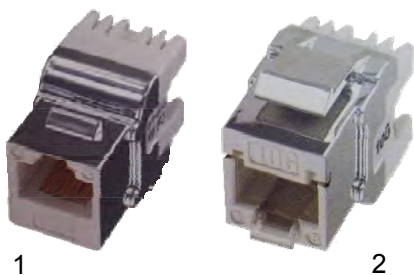
Ordering Information:

Color	PVC	CMR	LSZH
Gray	NB-C6A-CAU-01	NB-C6A-CAU-01-CMR	NB-C6A-CAU-01-LSOH
Blue	NB-C6A-CAU-02	NB-C6A-CAU-02-CMR	NB-C6A-CAU-02-LSOH
Purple	NB-C6A-CAU-03	NB-C6A-CAU-03-CMR	NB-C6A-CAU-03-LSOH
White	NB-C6A-CAU-04	NB-C6A-CAU-04-CMR	NB-C6A-CAU-04-LSOH

Electronic Characteristics:

FREQ (MHz)	INS LOSS (dB/100m)	RETURN LOSS (dB/100m)	NEXT (dB/100m)	PS NEXT (dB/100m)	ACR (dB/100m)	PS ACR (dB/100m)	PROP DELAY (dB/100m)	ALIEN CROSSTALK	
	Max	Min	Min	Min	Min	Min	Max	PS ANEXT (dB/100m)	PS AACRF (dB/100m)
1.0	2.0	20.0	78.3	76.3	71.8	68.8	570.0	67.0	67.0
4.0	3.7	24.2	69.3	67.3	59.8	56.8	552.0	67.0	66.2
8.0	5.2	26.3	64.8	62.8	53.7	50.7	546.7	67.0	60.1
10.0	5.9	27.0	63.3	61.3	51.8	48.8	545.4	67.0	58.2
16.0	7.4	27.0	60.2	58.2	47.7	44.7	543.0	67.0	54.1
20.0	8.3	27.0	58.8	56.8	45.8	42.8	542.0	67.0	52.2
25.0	9.3	26.3	57.3	55.3	43.8	40.8	541.2	67.0	50.2
31.25	10.4	25.6	55.9	53.9	41.9	38.9	540.4	67.0	48.3
62.5	14.9	23.5	51.4	49.4	35.9	32.9	538.6	65.6	42.3
100	19.0	22.1	48.3	46.3	31.8	28.8	537.6	62.5	38.2
155	24.0	20.8	45.4	43.4	28.0	25.0	536.9	59.6	34.4
200	27.5	20.0	43.8	41.8	25.8	22.8	536.5	58.0	32.2
250	31.0	19.3	42.3	40.3	23.8	20.8	536.3	56.5	30.2
300	34.2	18.8	41.1	39.3	22.3	19.3	536.1	55.3	28.7
350	37.2	18.3	40.1	38.1	20.9	17.9	535.9	54.3	27.3
400	40.0	17.9	39.3	37.3	19.8	16.8	535.8	53.5	26.2
500	45.3	17.5	37.8	35.8	17.8	14.8	535.6	52.0	24.2

Cat.6A 10G UTP Top-Entry Keystone Jack

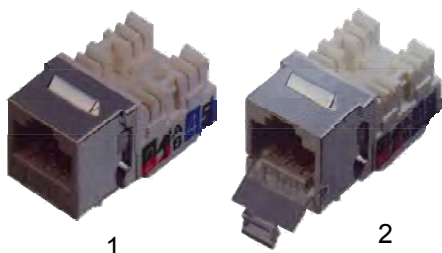


Color Option: WH **BK** **BL** **RE** **YE** **GN** **IV**

Part # (XX = color): Description:

1. **NB-C6A-KU1-XX** Cat.6A channel compliant UTP top-entry (180°) keystone jack, 110 IDC
2. **NB-C6A-KU2-XX** Cat.6A channel compliant UTP top-entry (180°), shuttered keystone jack, 110 IDC

Cat.6A 10G UTP Right-Angled Keystone Jack

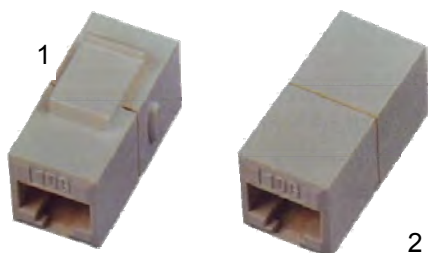


Color Option: WH **BK** **BL** **RE** **YE** **GN** **IV**

Part # (XX = color): Description:

1. **NB-C6A-KU3-XX** Cat.6A channel compliant UTP right-angled (90°) keystone jack, 110 IDC
2. **NB-C6A-KU4-XX** Cat.6A channel compliant UTP right-angled (90°), shuttered keystone jack, 110 IDC

Cat.6A 10G UTP In-Line Coupler



Color Option: WH **BK** **BL** **RE** **YE** **GN** **IV**

Part # (XX = color): Description:

1. **NB-C6A-LU1-XX** Cat.6A channel compliant UTP in-line coupler, outlet mountable
2. **NB-C6A-LU2-XX** Cat.6A channel compliant UTP in-line coupler, mobile style

Cat.6A 10G UTP Patch Cords



Color Option: **BK** **BL** **RE** **OR** **GN** **GR**

Part # (XX = color, YY=length (Mtr)): Description:

1. **NB-C6A-CU-YY-XX** Cat.6A, 4x2xAWG26/7 stranded, unscreened T568B wiring patch cord, snagless assembled boot, PVC
2. **NB-C6A-CU-YY-XX-LSOH** Cat.6A, 4x2xAWG26/7 stranded, unscreened T568B wiring patch cord, snagless assembled boot, LSOH

Cat.6A 10G UTP 24 Port Patch Panel



Part # :

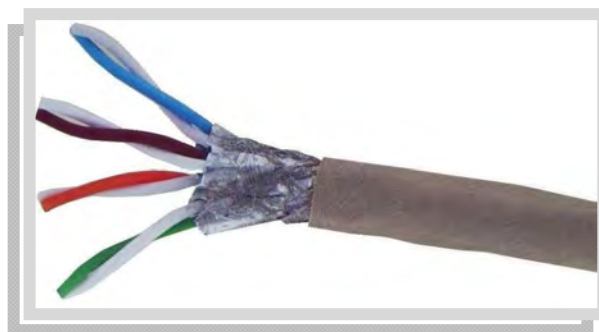
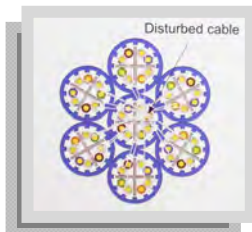
Description:

1. **NB-C6A-PPU-1** Cat.6A channel compliant UTP snap-in patch panel w/rear cable management, 110 IDC, 24-port, black color
2. **NB-C6A-PPU-2** Cat.6A channel compliant UTP shuttered snap-in patch panel w/rear cable management, 110 IDC, 24-port, black color

➤ Cat.6A 10G S/FTP Solid Cable

6-around-1 cable test configuration:

This test is for measuring alien crosstalk loss between pairs of adjacent cables in a 7-cable assembly consisting of the same design. Measure the ANEXT loss and AFEXT loss between each of the pairs of the disturbed cable and each pair of every disturbing cable. This will result in 96 measurements each for ANEXT loss and AFEXT loss. **Netbox 10GS Cables are under the 6-around-1 cable**



Product Feature:

- Great performance with headroom of upto 6dB
- All materials comply with ROHS standard
- Netbox 10GS LAN supports IEEE 802.3an 10G Base-T standard & TIA/EIA 568-B.2-10 DRAFT.7
- Test range from 1 to 750 MHz

Cable Data:

- 305m(1,000ft) Reel
- 23 AWG Solid Bare Copper Conductor
- 4 Pairs cabled together with a spline core separator
- Jacket: Low-smoke, flame-retardant PVC
- Outer diameter: 8.0mm
- Weight: 19 kg/305m
- Temperature Range: -20°C to +75°C

Electrical Characteristics:

- Impedence 100 +/- 15 ohms (10-550MHz)
- DC resistance, unbalance of a pair: 3% Max
- Capacitance unbalance (pair to ground): 330pF/100M Max
- Propagation delay skew: 25ns/100M

Ordering Information:

Color	PVC	CMR	LSZH
Gray	NB-C6A-CAS-01	NB-C6A-CAS-01-CMR	NB-C6A-CAS-01-LSOH
Blue	NB-C6A-CAS-02	NB-C6A-CAS-02-CMR	NB-C6A-CAS-02-LSOH
Purple	NB-C6A-CAS-03	NB-C6A-CAS-03-CMR	NB-C6A-CAS-03-LSOH
White	NB-C6A-CAS-04	NB-C6A-CAS-04-CMR	NB-C6A-CAS-04-LSOH

Electronic Characteristics:

FREQ (MHz)	INS LOSS (dB/100m)	RETURN LOSS (dB/100m)	NEXT (dB/100m)	PS NEXT (dB/100m)	ACR (dB/100m)	PS ACR (dB/100m)	PROP DELAY (dB/100m)	ALIEN CROSSTALK	
								PS ANEXT (dB/100m)	PS AACRF (dB/100m)
	Max	Min	Min	Min	Min	Min	Max	Min	Min
1.0	2.0	20.0	78.3	76.3	71.8	68.8	570.0	67.0	67.0
4.0	3.7	24.2	69.3	67.3	59.8	56.8	552.0	67.0	66.2
8.0	5.2	26.3	64.8	62.8	53.7	50.7	546.7	67.0	60.1
10.0	5.9	27.0	63.3	61.3	51.8	48.8	545.4	67.0	58.2
16.0	7.4	27.0	60.2	58.2	47.7	44.7	543.0	67.0	54.1
20.0	8.3	27.0	58.8	56.8	45.8	42.8	542.0	67.0	52.2
25.0	9.3	26.3	57.3	55.3	43.8	40.8	541.2	67.0	50.2
31.25	10.4	25.6	55.9	53.9	41.9	38.9	540.4	67.0	48.3
62.5	14.9	23.5	51.4	49.4	35.9	32.9	538.6	65.6	42.3
100	19.0	22.1	48.3	46.3	31.8	28.8	537.6	62.5	38.2
155	24.0	20.8	45.4	43.4	28.0	25.0	536.9	59.6	34.4
200	27.5	20.0	43.8	41.8	25.8	22.8	536.5	58.0	32.2
250	31.0	19.3	42.3	40.3	23.8	20.8	536.3	56.5	30.2
300	34.2	18.8	41.1	39.3	22.3	19.3	536.1	55.3	28.7
350	37.2	18.3	40.1	38.1	20.9	17.9	535.9	54.3	27.3
400	40.0	17.9	39.3	37.3	19.8	16.8	535.8	53.5	26.2
500	45.3	17.5	37.8	35.8	17.8	14.8	535.6	52.0	24.2

Cat.6A 10G Die-Cast STP right-angled Keystone Jack



Part #:

Description:

1. NB-C6A-KS1

Cat.6A channel compliant Die-Cast STP keystone jack, right-angled, 110 IDC

Cat.6A 10G Die-Cast STP Top-Entry Tool-less Keystone Jack



Part #:

Description:

1. NB-C6A-KS2

Cat.6A channel compliant Die-Cast STP keystone jack, top-entry, tool-less, 110 IDC

Cat.6A 10G STP In-Line Coupler



Part #:

Description:

1. NB-C6A-LS1

Cat.6A channel compliant STP in-line coupler, outlet mountable

Cat.6A 10G SSTP Patch Cords



Color Option: BK BL RE OR GN GR

Part # (XX = color, YY=length (Mtr)):

Description:

1. NB-C6A-CS-YY-XX

Cat.6A, 4x2xAWG26/7 stranded, screened T568B wiring patch cord, snagless molded boot, PVC

2. NB-C6A-CS-YY-XX-LSOH

Cat.6A, 4x2xAWG26/7 stranded, screened T568B wiring patch cord, snagless molded boot, LSOH

Cat.6A 10G STP 24 Port Patch Panel

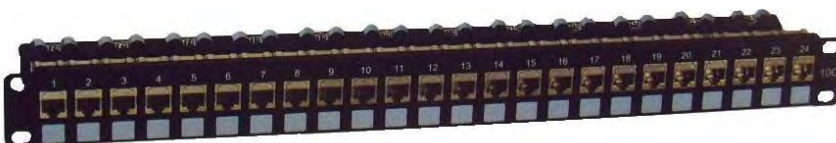


Part # :

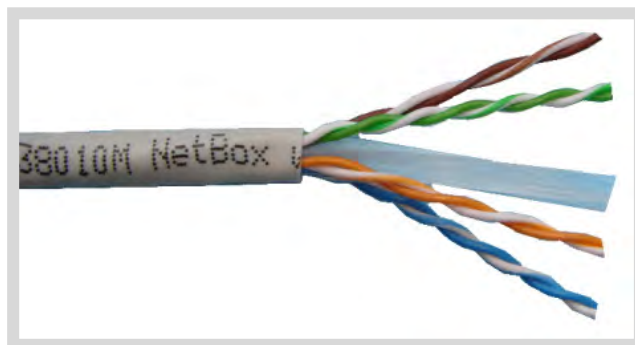
Description:

1. NB-C6A-PPS-1

Cat.6A channel compliant Die-Cast STP snap-in patch panel w/rear cable management, 110 IDC, 24-port, black color



➤ Cat. 6 UTP 250 MHz Solid Cable



Application:

- 1000BASE-T Gigabit Ethernet (IEEE 802.3)
- 100Base-T Fast Ethernet (IEEE802.5)
- 10Base-T (IEEE802.3)
- 155/622 Mbps 1.2/2.4 Gbps ATM
- Token Ring (IEEE802.5)
- 100 Mbps TP-PMD

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801(2nd edition)
- IEC 332-1

Cable Data:

- 305m(1,000ft) pull Box
- 23 AWG Solid Bare Copper Conductor (0.57mm)
- 4 Pairs, PE Insulation, Average thickness (±0.03mm): 0.22
- Insulation Dia (±0.03mm): 1.02
- Overall PVC jacket, LSOH & CMR on request (RoHS)
- Outer diameter (±1.0mm): 6.0mm
- Average jacket thickness : 0.5mm
- Weight: 13 kg/305m
- Minimum bend radius: O.D.*6 – 8
- Maximum pulling tension: 10Kg
- Choice of colors
- Flame Rating: CM, CMR, LSZH
- Twisting lay length (mm): 30 underneath
- Rip cord
- Temperature Range: -20°C to +75°C

Electrical Performance (at 250 MHz):

- 1.0-100.0 MHz Impedance: 100± 15 ohms
- 100.0-250.0 MHz Impedance: 100± 22 ohms
- Impedance Delay screws≤45
- Pair to ground capacitance unbalance (PF/100m) 330Max
- Conductor DC resistance 20% (ohms/km) ≤73.2
- Resistance unbalance (5%)
- Test object: jacket
- Test material: PVC
- Before tensile strength (Mpa) ≥13.8
- Aging Elongation (%): ≥ 100
- Aging condition (°C×hrs): 100x240
- After tensile strength (Mpa): ≥85% of unaged
- Aging elongation (%): ≥50% of unaged
- Cold bend (-20±2 °C× 4hrs): no crack

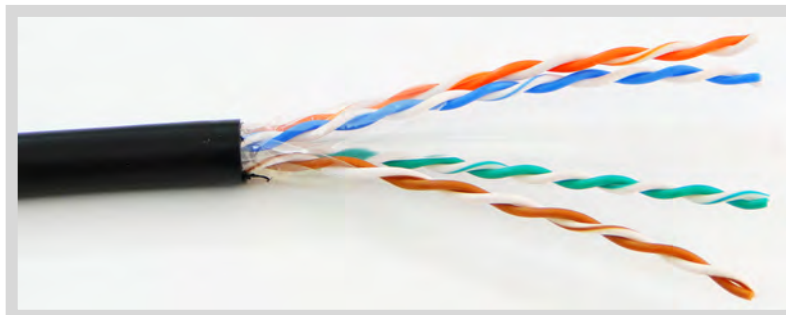
Electronic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL-FEXT Db/100m	RL db
1.0	2.0	74.3	72.0	72.3	67.8	64.8	20.0
4.0	3.8	65.3	61.0	63.3	55.8	52.8	23.0
8.0	5.3	60.8	55.0	58.8	49.7	46.7	24.5
10.0	6.0	59.3	53.0	57.3	47.8	44.8	25.0
16.0	7.6	56.2	49.0	54.2	43.7	40.7	25.0
20.0	8.5	54.8	46.0	52.8	41.8	38.8	25.0
25.0	9.5	53.3	44.0	51.3	39.8	36.8	24.3
31.25	10.7	51.9	41.0	49.9	37.9	34.9	23.6
62.5	15.4	47.4	32.0	45.4	31.9	28.9	21.5
100	19.8	44.3	24.5	42.3	27.8	24.8	20.1
200	29.0	39.8	10.8	37.8	21.8	18.8	18.0
250	32.8	38.3	5.5	36.3	19.8	16.8	17.3

Ordering Information:

Color	PVC	LSOH	CMR
Gray	NB-COP-001	NB-COP-001-LSOH	NB-COP-001-CMR
Blue	NB-COP-002	NB-COP-002-LSOH	NB-COP-002-CMR
Red	NB-COP-004	NB-COP-004-LSOH	NB-COP-004-CMR
Yellow	NB-COP-152	NB-COP-152-LSOH	NB-COP-152-CMR
Green	NB-COP-003	NB-COP-003-LSOH	NB-COP-003-CMR
Orange	NB-COP-153	NB-COP-153-LSOH	NB-COP-153-CMR
Black	NB-COP-154	NB-COP-154-LSOH	NB-COP-154-CMR

➤ Cat. 6 UTP 250 MHz Solid Cable (Outdoor Grade)



Application:

- 1000BASE-T Gigabit Ethernet (IEEE 802.3)
- 100Base-T Fast Ethernet (IEEE802.5)
- 10Base-T (IEEE802.3)
- 155/622 Mbps 1.2/2.4 Gbps ATM
- Token Ring (IEEE802.5)
- 100 Mbps TP-PMD

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801(2nd edition)
- IEC 332-1

Cable Data:

- 305m(1,000ft) Reel
- 23 AWG Solid Bare Copper Conductor (0.57mm)
- 4 Pairs, PE Insulation, Average thickness (±0.03mm): 0.22
- Insulation Dia (±0.03mm): 1.02
- Overall PE jacket (RoHS)
- Outer diameter (±1.0mm): 6.5mm
- Average jacket thickness : 0.7mm
- Weight: 14 kg/305m
- Minimum bend radius: O.D.*6 – 8
- Maximum pulling tension: 10Kg
- Twisting lay length (mm): 30 underneath
- Rip cord
- Temperature Range: -20°C to +85°C

Electrical Performance (at 250 MHz):

- 1.0-100.0 MHz Impedance: 100± 15 ohms
- 100.0-250.0 MHz Impedance: 100± 22 ohms
- Impedance Delay scews≤45
- Pair to ground capacitance unbalance (PF/100m) 330Max
- Conductor DC resistance 20% (ohms/km) ≤73.2
- Resistance unbalance (5%)
- Test object: jacket
- Test material: PVC
- Before tensile strength (Mpa) ≥13.8
- Aging Elongation (%): ≥ 100
- Aging condition (°Cxhrs): 100x240
- After tensile strength (Mpa): ≥85% of unaged
- Aging elongation (%): ≥50% of unaged
- Cold bend (-20±2 °Cx 4hrs): no crotch

Electronic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL-FEXT Db/100m	RL db
1.0	2.0	74.3	72.0	72.3	67.8	64.8	20.0
4.0	3.8	65.3	61.0	63.3	55.8	52.8	23.0
8.0	5.3	60.8	55.0	58.8	49.7	46.7	24.5
10.0	6.0	59.3	53.0	57.3	47.8	44.8	25.0
16.0	7.6	56.2	49.0	54.2	43.7	40.7	25.0
20.0	8.5	54.8	46.0	52.8	41.8	38.8	25.0
25.0	9.5	53.3	44.0	51.3	39.8	36.8	24.3
31.25	10.7	51.9	41.0	49.9	37.9	34.9	23.6
62.5	15.4	47.4	32.0	45.4	31.9	28.9	21.5
100	19.8	44.3	24.5	42.3	27.8	24.8	20.1
200	29.0	39.8	10.8	37.8	21.8	18.8	18.0
250	32.8	38.3	5.5	36.3	19.8	16.8	17.3

Ordering Information:

Color	PE
Black	NB-COP-202

➤ Cat.6 250-MHz, 4 Pair UTP Patch Cords



Application:

- 1000BASE-T Gigabit Ethernet (IEEE 802.3)
- 100Base-T Fast Ethernet (IEEE802.5)
- 10Base-T (IEEE802.3)
- 155/622 Mbps 1.2/2.4 Gbps ATM
- Token Ring (IEEE802.5)
- 100 Mbps TP-PMD

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801(2nd edition)
- IEC 332-1

Cable Data:

- Category 6, 24 AWG Stranded Copper Conductor
- 50u" Gold Plated on the plug Contacts
- Temperature Range: -20°C to +75°C
- FR PVC jacket, LSZH on request
- 4 Pairs (FRPE Insulation)
- Molded Boots
- Choice of colors
- Wiring: T568B

Electronic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL-FEXT Db/100m	RL db
100	19.8	44.3	24.5	42.3	27.8	24.8	20.1
200	29.0	39.8	10.8	37.8	21.8	18.8	18.0
250	32.8	38.3	5.5	36.3	19.8	16.8	17.3

Ordering Information:

Length	White	Blue	Green	Red	Gray	Yellow	Orange	Black
0.5M	NB-COP-203	NB-COP-204	NB-COP-205	NB-COP-206	NB-COP-191	NB-COP-207	NB-COP-208	NB-COP-209
1M	NB-COP-010	NB-COP-014	NB-COP-018	NB-COP-022	NB-COP-076	NB-COP-156	NB-COP-164	NB-COP-160
2M	NB-COP-011	NB-COP-015	NB-COP-019	NB-COP-023	NB-COP-079	NB-COP-157	NB-COP-165	NB-COP-161
3M	NB-COP-012	NB-COP-016	NB-COP-020	NB-COP-024	NB-COP-077	NB-COP-158	NB-COP-166	NB-COP-162
5M	NB-COP-013	NB-COP-017	NB-COP-021	NB-COP-025	NB-COP-078	NB-COP-159	NB-COP-167	NB-COP-163
10M	NB-COP-184	NB-COP-146	NB-COP-185	NB-COP-186	NB-COP-187	NB-COP-188	NB-COP-190	NB-COP-189

➤ Cat.6 24port & 48port UTP Patch Panels

• 48 Port Patch Panel



• 24 Port Patch Panel



• Rear Cable Management Bar



Product Description:

- 24-port 1U / 48-port 2U patch panels, Cat6 UTP type.
- ETL tested & verified CAT6 channel performance
- Combined cable management bar.
- According to the standard of ISO/IEC 11801:2002 CLASS E and ANSI/TIA/EIA/568B.2-1 Cat6 Standard.
- Universal wiring, panels are supplied with labeling for both T568A and T568B.
- Connecting: FCC port for Cat6 UTP patch cord and IDC for horizontal distribution in the cables.
- 110 and Krone dual type IDC termination.
- RJ45 jack Frame Material: PBT; golden plated phosphor bronze pins; Brass housing with nickel-plated; IDC clip; Tinned phosphor bronze pins.
- Use in 250MHz applications.

Electrical:

- Voltage rating: 125 VAC RMS
- Current rating: 1.5 AMP
- Contact resistance: 100 Milliohms Max
- Insulation resistance: 1000 Megohms Min @ 500 VDC
- Dielectric strength: 750 VAC RMS 60Hz, 1Min

Environmental:

- Storage : -40°C to +85°C
- Operation: 0°C to 70°C
- Conform to ANSI/TIA/EIA-568 B.2-1
- Mates with modular plug conforming to FCC Part 68

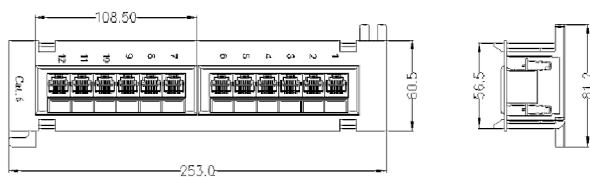
Mechanical:

- Housing material: PBT + 15% GF UL94V-0
- Panel Frame: Carbon steel, powder coating in black color
- Contact material: PC UL94V-0 contact, Phosphor bronze with nickel plating
- RJ45 Jack life: 750 Times Min
- IDC Life: 200 Times Min
- Wire: AWG 24-26

Ordering Information:

P/N	Description
NB-COP-040	24 port Unshielded Cat. 6 patch panel, 1U, 110 & Krone dual Type, with Rear cable management bar
NB-COP-041	48 port Unshielded Cat. 6 patch panel, 2U, 110 & Krone dual Type, with Rear cable management bar

➤ Cat.6 UTP Mini Patch Panel



Product Description:

- 12 ports patch panel, Cat6 UTP type.
- ETL tested & verified CAT6 channel performance
- According to the standard of ISO/IEC 11801:2002 CLASS E and ANSI/TIA/EIA/568B.2-1 Cat6 Standard.
- Universal wiring, panels are supplied with labeling for both T568A and T568B.
- 110 and Krone dual type IDC termination.
- Entire high-carbon steel outer frame, with plastic powder cladding.
- RJ45 jack Frame Material: PBT; golden plated phosphor bronze pins; Brass housing with nickel-plated; IDC clip; Tinned phosphor bronze pins.
- Use in 250MHz applications.

Environmental:

- Storage : -40°C to +85°C
- Operation: 0°C to 70°C
- Conform to ANSI/TIA/EIA-568 B.2-1
- Mates with modular plug conforming to FCC Part 68

Electrical:

- Voltage rating: 125 VAC RMS
- Current rating: 1.5 AMP
- Contact resistance: 100 Milliohms Max
- Insulation resistance: 1000 Megohms Min @ 500 VDC
- Dielectric strength: 750 VAC RMS 60Hz, 1Min

Mechanical:

- Housing material: PBT + 15% GF UL94V-0
- Panel Frame: Carbon steel, powder coating in black color
- Contact material: PC UL94V-0 contact, Phosphor bronze with nickel plating
- RJ45 Jack life: 750 Times Min
- IDC Life: 200 Times Min
- Wire: AWG 24-26

Ordering Information:

P/N	Description
NB-COP-090	12 port Unshielded Cat.6 Wall mounted patch panel

➤ Cat.6 UTP RJ45 Plug

Product Description:

- Housing: Polycarbonate
- Contact: Copper alloy 50u"gold plated over nickel
- 24-26 AWG stranded & solid wire
- Durability: 750 cycles Min.
- Exceed category 6 specifications
- Use with the universal RJ crimp tool

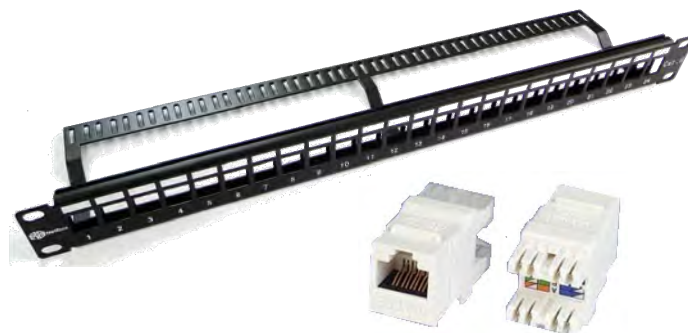


P/N: NB-COP-059

➤ Cat.6 UTP Blank Panel

Product Description:

- Entire steel 24 ports UTP blank patch panel.
- Material: Carbon steel, 1.5mm, powder coated, Black color
- UTP Cat6 or Cat5e keystone jacks can be assembled on this panel.
- The cable manager is combined in this patch panel.
- All kinds of cables with different dimensions can be fixed on the patch panel.
- Fitting for horizontal distribution in the equipments room and equipments connecting.



Ordering Information:

NB-COP-047

P/N	Description
NB-COP-200	Blank Snap-in patch panel with Back bar, 24 port
NB-COP-047	Cat.6 110/ krone Vertical (180°) Keystone Jack, T568A/B, White

➤ Keystone Jack (Cat6 UTP)



NB-COP-056



NB-COP-047



Product Description:

- Keystone jack, Cat6 UTP type, 90° and 180° punching direction, fit for connecting application of communication ports in working area.
- A compact & ingenious designing, with the punching sequence direction marks on the sides of keystone jack, which can provide a correct and quick guide for punching and connecting operation. And the fastener hats will make sure that the cable can be fixed reliably in the IDC clips.
- T568A punching sequence and T568B punching sequence are both compatible.
- Connection type: FCC connector for RJ45 patch cord and IDC for 4 pair Cat6 cables.
- Fitting for Cat6 general cable distribution systems. Compatible for Cat5 and Cat5e systems.
- Inserting duration: 750 times.
- Punching duration: 250 times.
- Standard 110 punching tool.
- Testing condition of transmitting capability: 250MHz.

Electrical:

- Voltage rating: 125 VAC RMS
- Current rating: 1.5 AMP
- Contact resistance: 100 Milliohms Max
- Insulation resistance: 1000 Megohms Min @ 500 VDC
- Dielectric strength: 750 VAC RMS 60Hz, 1Min
- CAT6 Permanent Link: Conform to ANSI/TIA/EIA-568 B.2-1

Environmental:

- Storage: -40°C to +85°C
- Operation: 0°C to 70°C
- Mates with modular plug conforming to FCC Part 68, Subpart F.

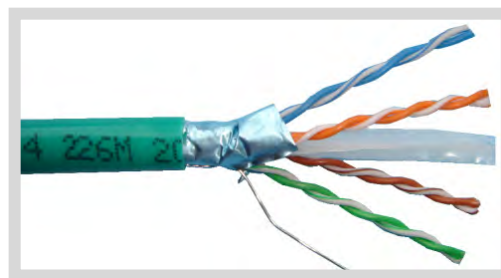
Mechanical:

- Housing Material: PC UL94V-0
- Insert Material: Flame Retardancy ABS UL94V-0
- PCB Material: FR-4 Thickness: 1.6mm
- Contact Material: Phosphor bronze stamp pin T=0.35mm
- IDC Contact Material: Phosphor Bronze T=0.50mm with Nickel Plating
- Wire: AWG 24-26

Ordering Information:

Part No.	Description
NB-COP-047	Cat.6 110/ krone Vertical (180°) Keystone Jack, T568A/B, White
NB-COP-048	Cat.6 110/ krone Vertical (180°) Keystone Jack, T568A/B, Black
NB-COP-049	Cat.6 110/ krone Right-angle (90°) Keystone Jack, T568A/B, White
NB-COP-050	Cat.6 110/ krone Right-angle (90°) Keystone Jack, T568A/B, Blue
NB-COP-051	Cat.6 110/ krone Right-angle (90°) Keystone Jack, T568A/B, Green
NB-COP-052	Cat.6 110/ krone Right-angle (90°) Keystone Jack, T568A/B, Red
NB-COP-053	Cat.6 110/ krone Right-angle (90°) Keystone Jack, T568A/B, Yellow
NB-COP-054	Cat.6 110/ krone Right-angle (90°) Keystone Jack, T568A/B, Black
NB-COP-169	Cat.6 110/ krone Right-angle (90°) Keystone Jack, T568A/B, Orange
NB-COP-056	Cat.6 Tool less, 110/ krone Right-angle (90°) Keystone Jack, T568A/B, White

➤ Cat. 6 FTP 250 MHz Solid Cable



Application:

- 1000BASE-T Gigabit Ethernet (IEEE 802.3)
- 100Base-T Fast Ethernet (IEEE802.5)
- 10Base-T (IEEE802.3)
- 155/622 Mbps 1.2/2.4 Gbps ATM
- Token Ring (IEEE802.5)
- 100 Mbps TP-PMD

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801(2nd edition)
- IEC 332-1

Cable Data:

- 305m(1,000ft) pull Box
- 100% Aluminum foil tape screen
- 23 AWG Solid Bare Copper Conductor (0.57mm)
- 4 Pairs, PE Insulation, Average thickness (±0.03mm): 0.28
- Insulation Dia (±0.03mm): 1.02
- Overall PVC jacket, LSOH & CMR on request (RoHS)
- Outer diameter (±1.0mm): 6.6mm
- Average jacket thickness : 0.5mm
- Weight: 17kg/305m
- Minimum bend radius: O.D.*6 – 8
- Maximum pulling tension: 10Kg
- Choice of colors
- Flame Rating: CM, CMR, LSZH
- Twisting lay length (mm): 30 underneath
- Rip cord
- Temperature Range: -20°C to +75°C

Electrical Performance (at 250 MHz):

- 1.0-100.0 MHz Impedance: 100± 15 ohms
- 100.0-250.0 MHz Impedance: 100± 22 ohms
- Impedance Delay scw≤45
- Pair to ground capacitance unbalance (PF/100m) 330Max
- Conductor DC resistance 20% (ohms/km) ≤73.2
- Resistance unbalance (5%)
- Test object: jacket
- Test material: PVC
- Before tensile strength (Mpa) ≥13.8
- Aging Elongation (%): ≥ 100
- Aging condition (°C×hrs): 100×240
- After tensile strength (Mpa): ≥85% of unaged
- Aging elongation (%): ≥50% of unaged
- Cold bend (-20±2 °C× 4hrs): no crack

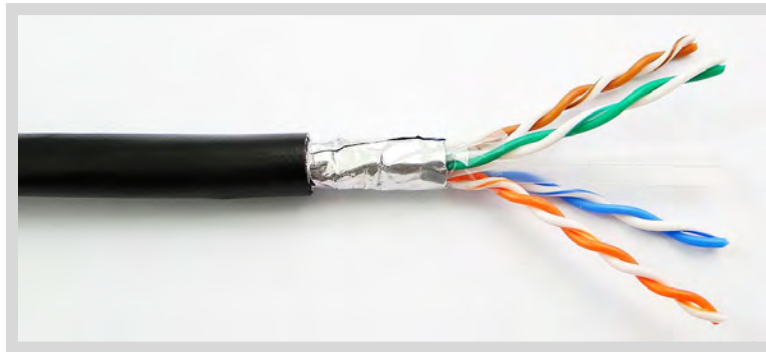
Electronic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL-FEXT Db/100m	RL db
1.0	2.0	74.3	72.0	72.3	67.8	64.8	20.0
4.0	3.8	65.3	61.0	63.3	55.8	52.8	23.0
8.0	5.3	60.8	55.0	58.8	49.7	46.7	24.5
10.0	6.0	59.3	53.0	57.3	47.8	44.8	25.0
16.0	7.6	56.2	49.0	54.2	43.7	40.7	25.0
20.0	8.5	54.8	46.0	52.8	41.8	38.8	25.0
25.0	9.5	53.3	44.0	51.3	39.8	36.8	24.3
31.25	10.7	51.9	41.0	49.9	37.9	34.9	23.6
62.5	15.4	47.4	32.0	45.4	31.9	28.9	21.5
100	19.8	44.3	24.5	42.3	27.8	24.8	20.1
200	29.0	39.8	10.8	37.8	21.8	18.8	18.0
250	32.8	38.3	5.5	36.3	19.8	16.8	17.3

Ordering Information:

Color	PVC	LSOH	CMR
Dark Gray	NB-COP-155	NB-COP-155-LSOH	NB-COP-155-CMR
Blue	NB-COP-173	NB-COP-173-LSOH	NB-COP-173-CMR
Red	NB-COP-006	NB-COP-006-LSOH	NB-COP-006-CMR
Yellow	NB-COP-174	NB-COP-174-LSOH	NB-COP-174-CMR
Green	NB-COP-005	NB-COP-005-LSOH	NB-COP-005-CMR
Orange	NB-COP-175	NB-COP-175-LSOH	NB-COP-175-CMR
Black	NB-COP-176	NB-COP-176-LSOH	NB-COP-176-CMR

➤ Cat. 6 FTP 250 MHz Solid Cable (Outdoor Grade)



Application:

- 1000BASE-T Gigabit Ethernet (IEEE 802.3)
- 100Base-T Fast Ethernet (IEEE802.5)
- 10Base-T (IEEE802.3)
- 155/622 Mbps 1.2/2.4 Gbps ATM
- Token Ring (IEEE802.5)
- 100 Mbps TP-PMD

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801(2nd edition)
- IEC 332-1

Cable Data:

- 305m(1,000ft) Reel
- 100% Aluminum foil tape screen
- 23 AWG Solid Bare Copper Conductor (0.57mm)
- 4 Pairs, PE Insulation, Average thickness (±0.03mm): 0.28
- Insulation Dia (±0.03mm): 1.02
- Overall PE jacket (RoHS)
- Outer diameter (±1.0mm): 6.6mm
- Average jacket thickness : 0.5mm
- Weight: 18kg/305m
- Minimum bend radius: O.D.*6 – 8
- Maximum pulling tension: 10Kg
- Twisting lay length (mm): 30 underneath
- Rip cord
- Temperature Range: -20°C to +85°C

Electrical Performance (at 250 MHz):

- 1.0-100.0 MHz Impedance: 100± 15 ohms
- 100.0-250.0 MHz Impedance: 100± 22 ohms
- Impedance Delay scw≤45
- Pair to ground capacitance unbalance (PF/100m) 330Max
- Conductor DC resistance 20% (ohms/km) ≤73.2
- Resistance unbalance (5%)
- Test object: jacket
- Test material: PVC
- Before tensile strength (Mpa) ≥13.8
- Aging Elongation (%): ≥ 100
- Aging condition (°Cxhrs): 100x240
- After tensile strength (Mpa): ≥85% of unaged
- Aging elongation (%): ≥50% of unaged
- Cold bend (-20±2 °Cx 4hrs): no crack

Electronic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL-FEXT Db/100m	RL db
1.0	2.0	74.3	72.0	72.3	67.8	64.8	20.0
4.0	3.8	65.3	61.0	63.3	55.8	52.8	23.0
8.0	5.3	60.8	55.0	58.8	49.7	46.7	24.5
10.0	6.0	59.3	53.0	57.3	47.8	44.8	25.0
16.0	7.6	56.2	49.0	54.2	43.7	40.7	25.0
20.0	8.5	54.8	46.0	52.8	41.8	38.8	25.0
25.0	9.5	53.3	44.0	51.3	39.8	36.8	24.3
31.25	10.7	51.9	41.0	49.9	37.9	34.9	23.6
62.5	15.4	47.4	32.0	45.4	31.9	28.9	21.5
100	19.8	44.3	24.5	42.3	27.8	24.8	20.1
200	29.0	39.8	10.8	37.8	21.8	18.8	18.0
250	32.8	38.3	5.5	36.3	19.8	16.8	17.3

Ordering Information:

Color	P/N
Black	NB-COP-210

➤ Cat.6 4 Pair FTP Patch Cords



Application:

- 1000BASE-T Gigabit Ethernet (IEEE 802.3)
- 100Base-T Fast Ethernet (IEEE802.5)
- 10Base-T (IEEE802.3)
- 155/622 Mbps 1.2/2.4 Gbps ATM
- Token Ring (IEEE802.5)
- 100 Mbps TP-PMD

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801(2nd edition)
- IEC 332-1

Cable Data:

- Category 6, 24 AWG Stranded Copper Conductor
- Foil shielding protects against (EMI) & (RFI)
- 50u" Gold Plated on the plug Contacts
- Temperature Range: -20°C to +75°C
- FR PVC jacket, LSOH on request
- 4 Pairs (FRPE Insulation)
- Molded Boots
- Choice of colors
- Wiring: T568B

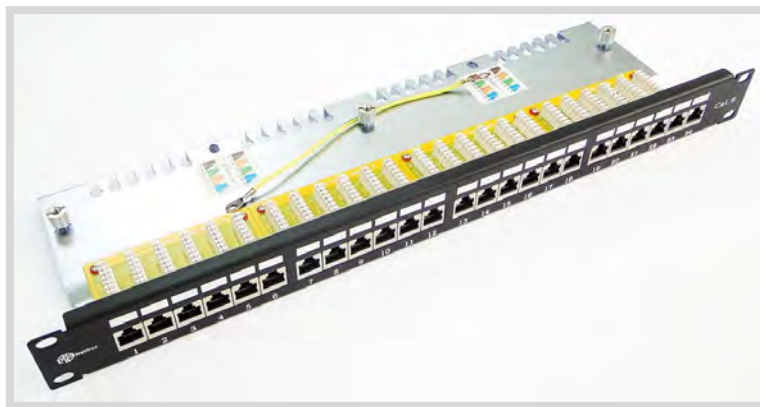
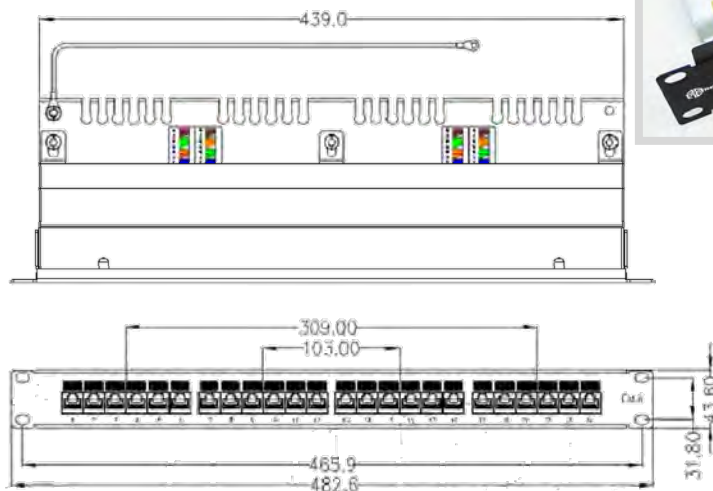
Electronic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL- FEXT Db/100m	RL db
100	19.8	44.3	24.5	42.3	27.8	24.8	20.1
200	29.0	39.8	10.8	37.8	21.8	18.8	18.0
250	32.8	38.3	5.5	36.3	19.8	16.8	17.3

Ordering Information:

Length	White	Blue	Green	Red	Dark Gray
0.5M	NB-COP-211	NB-COP-212	NB-COP-213	NB-COP-214	NB-COP-215
1M	NB-COP-126	NB-COP-130	NB-COP-134	NB-COP-138	NB-COP-142
2M	NB-COP-127	NB-COP-131	NB-COP-135	NB-COP-139	NB-COP-143
3M	NB-COP-128	NB-COP-132	NB-COP-136	NB-COP-140	NB-COP-144
5M	NB-COP-129	NB-COP-133	NB-COP-137	NB-COP-141	NB-COP-145
10M	NB-COP-216	NB-COP-217	NB-COP-218	NB-COP-219	NB-COP-220

➤ Cat.6 24port FTP Patch Panel



Product Description:

- 24-port 1U patch panel, Cat6 FTP type.
- ETL tested & verified CAT6 channel performance
- Cable management and grounding devices are combined in this patch panel.
- According to the standard of ISO/IEC 11801:2002 CLASS E and ANSI/TIA/EIA/568B.2-1 Cat6 Standard.
- Universal wiring, panels are supplied with labeling for both T568A and T568B.
- Connecting: FCC port for Cat6 FTP patch cord and IDC for horizontal distribution in the cables.
- 110 and Krone dual type IDC termination.
- RJ45 jack Frame Material: PBT; golden plated phosphor bronze pins; Shielding shell of RJ45 jack; Brass housing with nickel-plated; IDC clip; Tinned phosphor bronze pins.
- Use in 250MHz applications.

Electrical:

- Voltage rating: 125 VAC RMS
- Current rating: 1.5 AMP
- Contact resistance: 100 Milliohms Max
- Insulation resistance: 1000 Megohms Min @ 500 VDC
- Dielectric strength: 750 VAC RMS 60Hz, 1Min

Environmental:

- Storage : -40°C to +85°C
- Operation: 0°C to 70°C
- Conform to ANSI/TIA/EIA-568 B.2-1
- Mates with modular plug conforming to FCC Part 68

Mechanical:

- Housing material: PBT + 15% GF UL94V-0
- Panel Frame: ZN Plating, then powder coated
- Contact material: PC UL94V-0 contact, Phosphor bronze with nickel plating
- RJ45 Jack life: 750 Times Min
- IDC Life: 200 Times Min
- Wire: AWG 24-26

Ordering Information:

P/N	Description
NB-COP-042	24 port FTP Cat. 6 patch panel, 1U, 110 & Krone Dual Type

➤ Keystone Jack (Cat6 FTP)

NB-COP-055



NB-COP-094



Product Description:

- Shielded KJ. The products are used in the equipment rooms & work area as communication connectors of the intelligent buildings.
- The product can resist the Electro Magnetic Interference (EMI) effectively with the compact full-closed shielding structure.
- According to the requirement of T568A & T568B, the T568A & T568B labels are stuck on both sides of the product to give an exact guide.
- Connecting: RJ45 port for FTP patch cord and the IDC port for FTP horizontal cabling.
- According to the ROHS requirement.
- Inserting Duration: 750 times.
- Punching Duration: 250 times.
- Testing condition of transmitting capability; 250MHz.

Electrical:

- Voltage rating: 125 VAC RMS
- Current rating: 1.5 AMP
- Contact resistance: 100 Milliohms Max
- Insulation resistance: 1000 Megohms Min @ 500 VDC
- Dielectric strength: 750 VAC RMS 60Hz, 1Min
- CAT6 Permanent Link: Conform to ANSI/TIA/EIA-568 B.2-1

Environmental:

- Storage: -40°C to +85°C
- Operation: 0°C to 70°C
- Mates with modular plug conforming to FCC Part 68, Subpart F.

Mechanical:

- Shield Material: Brass T=0.30mm Nickel Plating
- Housing Material: PC UL94V-0
- Insert Material: Flame Retardancy ABS UL94V-0
- PCB Material: FR-4 Thickness: 1.6mm
- Contact Material: Phosphor bronze stamp pin T=0.35mm
- IDC Contact Material: Phosphor Bronze T=0.50mm Nickel Plating
- Wire: AWG 24-26

Ordering Information:

Part No.	Description
NB-COP-055	Cat.6 110/ krone Right-angle (90°) Keystone Jack, T568A/B, FTP
NB-COP-094	Cat.6 110/ krone Vertical (180°) Keystone Jack, T568A/B, FTP

➤ Cat.6 FTP RJ45 Plug

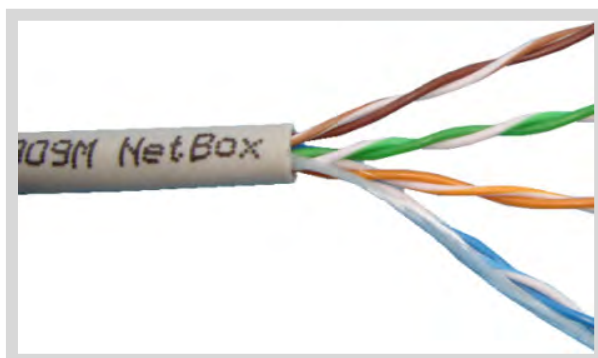
Product Description:

- Housing: Polycarbonate
- Contact: Copper alloy 50u"gold plated over nickel
- 24-26 AWG stranded & solid wire
- Durability: 750 cycles Min.
- Exceed category 6 specifications
- Use with the universal RJ crimp tool



P/N: NB-COP-095

➤ Cat. 5E UTP 100 MHz Solid Cable



Application:

- 10BASE-T/100BASE-TX/1000BASE-T
- 55-Mbps/155-Mbps & 622-Mbps ATM
- 4-Mbps/16-Mbps Token Ring
- 100-Mbps TP-PMD
- ISDN

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801
- IEC 332-1

Cable Data:

- 305m(1,000ft) pull Box
- 24 AWG Solid Bare Copper Conductor (0.51mm)
- 4 Pairs, PE Insulation, Average thickness (± 0.03 mm): 0.20
- Insulation Dia (± 0.03 mm): 0.91
- Overall PVC jacket, LSOH & CMR on request (RoHS)
- Outer diameter (± 1.0 mm): 5.1mm
- Average jacket thickness : 0.5mm
- Weight: 10kg/305m
- Minimum bend radius: O.D.*4 - 6
- Maximum pulling tension: 10Kg
- Choice of colors
- Flame Rating: CM, CMR, LSZH
- Twisting lay length (mm): 30 underneath
- Rip cord
- Temperature Range: -20°C to +75°C

Electrical Performance (at 100 MHz):

- 1.0-100.0 MHz Impedance: 100 ± 15 ohms
- 1.0-100.0 MHz Impedance Delay ≤ 45
- Pair to ground capacitance unbalance (PF/100m) 330Max
- Conductor DC resistance 20% (ohms/km) ≤ 93.8
- Resistance unbalance (5%)
- Test object: jacket
- Test material: PVC
- Before tensile strength (Mpa) ≥ 13.8
- Aging Elongation (%): ≥ 100
- Aging condition ($^{\circ}\text{C} \times \text{hrs}$): 100x240
- After tensile strength (Mpa): $\geq 85\%$ of unaged
- Aging elongation (%): $\geq 50\%$ of unaged
- Cold bend (-20 ± 2 $^{\circ}\text{C} \times 4$ hrs): no crack

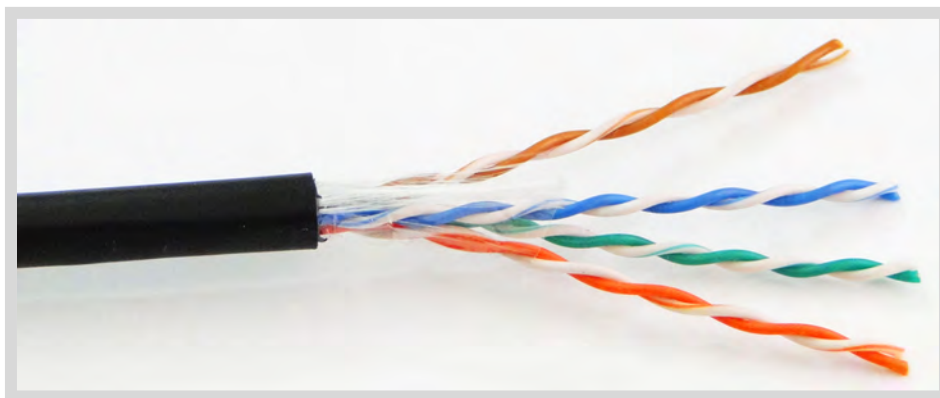
Electr nic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL-FEXT Db/100m	RL db
1.0	2.0	65.3	63.0	62.3	63.8	60.8	20.0
4.0	4.1	56.3	52.0	53.3	51.7	48.7	23.0
8.0	5.8	51.8	46.0	48.8	45.7	42.7	24.5
10.0	6.5	50.3	44.0	47.3	43.8	40.8	25.0
16.0	8.2	47.3	39.0	44.3	39.7	36.7	25.0
20.0	9.3	45.8	37.0	42.8	37.7	34.7	25.0
25.0	10.4	44.3	34.0	41.3	35.8	32.8	24.3
31.25	11.7	42.9	31.0	39.9	33.9	30.9	23.6
62.5	17.0	38.4	21.0	35.4	27.8	24.8	21.5
100	22.0	35.3	13.0	32.3	23.8	20.8	20.1

Ordering Information:

Color	PVC	LSOH	CMR
White	NB-COP-008	NB-COP-008-LSOH	NB-COP-008-CMR
Gray	NB-COP-007	NB-COP-007-LSOH	NB-COP-007-CMR
Blue	NB-COP-080	NB-COP-080-LSOH	NB-COP-080-CMR
Red	NB-COP-082	NB-COP-082-LSOH	NB-COP-082-CMR
Yellow	NB-COP-081	NB-COP-081-LSOH	NB-COP-081-CMR
Green	NB-COP-221	NB-COP-221-LSOH	NB-COP-221-CMR
Orange	NB-COP-222	NB-COP-222-LSOH	NB-COP-222-CMR
Black	NB-COP-223	NB-COP-223-LSOH	NB-COP-223-CMR

➤ Cat. 5E UTP 100 MHz Solid Cable (Outdoor Grade)



Application:

- 10BASE-T/100BASE-TX/1000BASE-T
- 55-Mbps/155-Mbps & 622-Mbps ATM
- 4-Mbps/16-Mbps Token Ring
- 100-Mbps TP-PMD
- ISDN

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801
- IEC 332-1

Cable Data:

- 305m(1,000ft) Reel
- 24 AWG Solid Bare Copper Conductor (0.51mm)
- 4 Pairs, PE Insulation, Average thickness (± 0.03 mm): 0.20
- Insulation Dia (± 0.03 mm): 1.0mm
- Overall PE jacket (RoHS)
- Outer diameter (± 1.0 mm): 5.4mm
- Average jacket thickness : 0.5mm
- Weight: 12kg/305m
- Minimum bend radius: O.D.*4 - 6
- Maximum pulling tension: 10Kg
- Twisting lay length (mm): 30 underneath
- Rip cord
- Temperature Range: -20°C to +85°C

Electrical Performance (at 100 MHz):

- 1.0-100.0 MHz Impedance: 100 ± 15 ohms
- 1.0-100.0 MHz Impedance Delay ≤ 45
- Pair to ground capacitance unbalance (PF/100m) 330Max
- Conductor DC resistance 20% (ohms/km) ≤ 93.8
- Resistance unbalance (5%)
- Test object: jacket
- Test material: PVC
- Before tensile strength (Mpa) ≥ 13.8
- Aging Elongation (%): ≥ 100
- Aging condition ($^{\circ}\text{C} \times \text{hrs}$): 100x240
- After tensile strength (Mpa): $\geq 85\%$ of unaged
- Aging elongation (%): $\geq 50\%$ of unaged
- Cold bend ($-20 \pm 2^{\circ}\text{C} \times 4\text{hrs}$): no crack

Electronic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL-FEXT Db/100m	RL db
1.0	2.0	65.3	63.0	62.3	63.8	60.8	20.0
4.0	4.1	56.3	52.0	53.3	51.7	48.7	23.0
8.0	5.8	51.8	46.0	48.8	45.7	42.7	24.5
10.0	6.5	50.3	44.0	47.3	43.8	40.8	25.0
16.0	8.2	47.3	39.0	44.3	39.7	36.7	25.0
20.0	9.3	45.8	37.0	42.8	37.7	34.7	25.0
25.0	10.4	44.3	34.0	41.3	35.8	32.8	24.3
31.25	11.7	42.9	31.0	39.9	33.9	30.9	23.6
62.5	17.0	38.4	21.0	35.4	27.8	24.8	21.5
100	22.0	35.3	13.0	32.3	23.8	20.8	20.1

Ordering Information:

Color	P/N
Black	NB-COP-170

➤ Cat.5E 100-MHz, 4 Pair UTP Patch Cords



Application:

- 10Base-T Ethernet (IEEE802.3)
- Fast Ethernet (IEEE 802.3u)
- ATM 155
- Token Ring
- TP-PMD Audio
- 1000Base-T
- Voice

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801
- IEC 332-1

Cable Data:

- 24 AWG Stranded Copper Conductor
- 50u" Gold Plated on the plug Contacts
- Temperature Range: -20°C to +75°C
- FR PVC jacket, LSOH on request
- 4 Pairs (FRPE Insulation)
- Molded Boots
- Choice of colors
- Wiring: T568B

Electronic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL-FEXT Db/100m	RL db
10.0	6.5	50.3	44.0	47.3	43.8	40.8	25.0
31.25	11.7	42.9	31.0	39.9	33.9	30.9	23.6
62.5	17.0	38.4	21.0	35.4	27.8	24.8	21.5
100	22.0	35.3	13.0	32.3	23.8	20.8	20.1

Ordering Information:

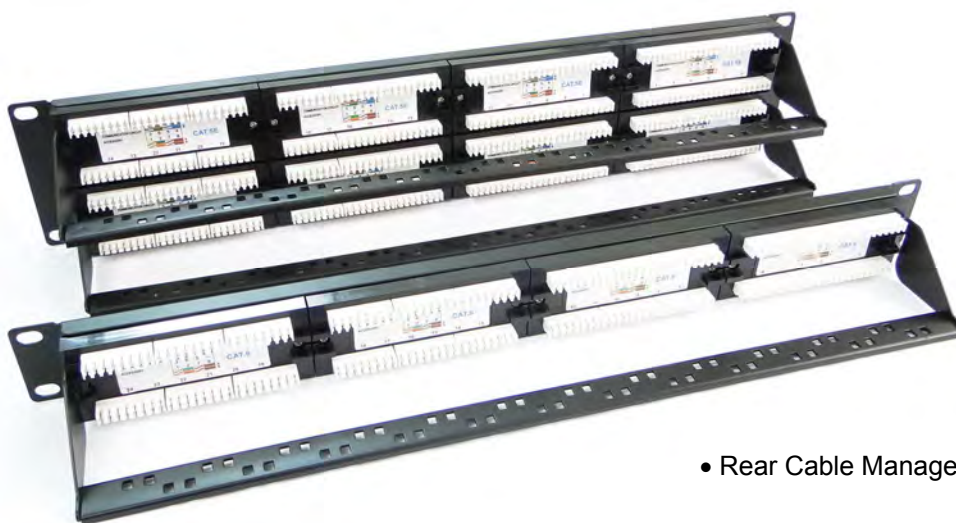
Length	White	Blue	Green	Red	Gray
1M	NB-COP-026	NB-COP-030	NB-COP-100	NB-COP-104	NB-COP-108
2M	NB-COP-027	NB-COP-031	NB-COP-101	NB-COP-105	NB-COP-109
3M	NB-COP-028	NB-COP-032	NB-COP-102	NB-COP-106	NB-COP-110
5M	NB-COP-029	NB-COP-033	NB-COP-103	NB-COP-107	NB-COP-111

➤ Cat.5e 100-MHz UTP Patch Panel



• 48 Port Patch Panel

• 24 Port Patch Panel



• Rear Cable Management Bar

Product Description:

- 24-port 1U / 48-port 2U patch panels, Cat5e UTP type.
- The structure of each port of this patch panel is same which makes sure that the performance of each port is consistent.
- Combined cable management bar.
- Universal wiring, panels are supplied with labeling for both T568A and T568B.
- 110 and Krone dual type IDC termination.
- Use in 100MHz applications.

Electrical:

- Voltage rating: 125 VAC RMS
- Current rating: 1.5 AMP
- Contact resistance: 100 Milliohms Max
- Insulation resistance: 1000 Megohms Min @ 500 VDC
- Dielectric strength: 750 VAC RMS 60Hz, 1Min

Environmental:

- Storage : -40°C to +85°C
- Operation: 0°C to 70°C
- Conform to TIA/EIA 568B Category 5e
- Mates with modular plug conforming to FCC Part 68, Sub part F.

Mechanical:

- Housing material: PBT + 15% GF UL94V-0
- Panel Frame: Carbon steel, powder coating in black color
- Contact material: PC UL94V-0 contact, Phosphor bronze with nickel plating
- RJ45 Jack life: 750 Times Min
- IDC Life: 200 Times Min
- Wire: AWG 24-26

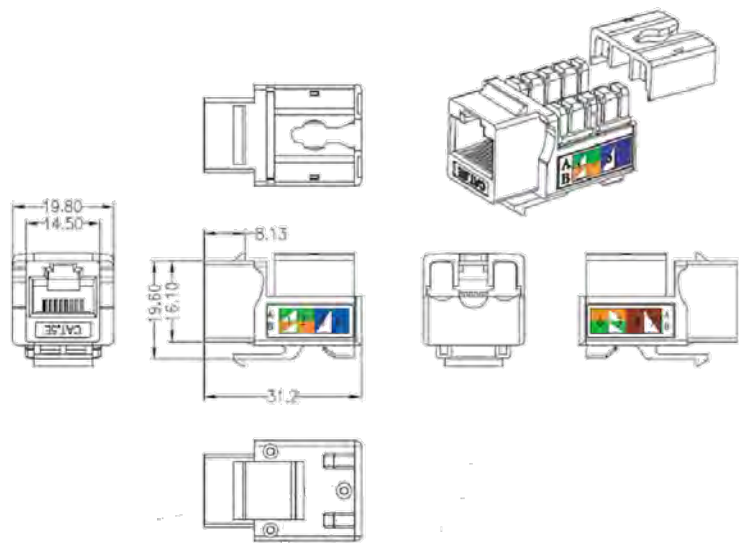
Ordering Information:

P/N	Description
NB-COP-045	24 port Unshielded Cat. 5E patch panel, Colored
NB-COP-043	24 port Unshielded Cat. 5E patch panel with Rear cable management bar
NB-COP-044	48 port Unshielded Cat. 5E patch panel with Rear cable management bar

➤ Cat5e UTP Keystone Jack



NB-COP-057



Product Description:

- Keystone jack, Cat5e class, UTP Type, fit for connecting application of communication ports in working area.
- Inserting duration: 750 times.
- Punching duration: 250 times.
- Testing condition of transmitting capability: 100MHz.

Environmental:

- Storage : -40°C to +85°C
- Operation: 0°C to 70°C
- Conform to TIA/EIA 568B Category 5e

Electrical:

- Voltage rating: 125 VAC RMS
- Current rating: 1.5 AMP
- Contact resistance: 100 Milliohms Max
- Insulation resistance: 1000 Megohms Min @ 500 VDC
- Dielectric strength: 750 VAC RMS 60Hz, 1Min

Mechanical:

- Housing Material: PC UL94V-0
- Insert Material: Flame Retardancy ABS UL94V-0
- PCB Material: FR-4 Thickness: 1.6mm
- Contact Material: Phosphor bronze stamp pin T=0.35mm
- IDC Contact Material: Phosphor Bronze T=0.50mm with Nickel Plating
- Wire: AWG 24-26

➤ Cat.5e UTP RJ45 Plug

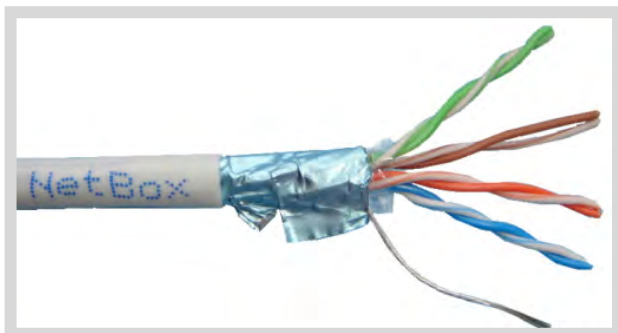
Product Description:

- Housing: Polycarbonate
- Contact: Copper alloy 50u"gold plated over nickel
- 24-26 AWG stranded & solid wire
- Durability: 750 cycles Min.
- Meet or exceed Cat5e specifications
- Use with the universal RJ crimp tool



P/N: NB-COP-060

➤ Cat. 5E FTP 100 MHz Solid Cable



Application:

- 10BASE-T/100BASE-TX/1000BASE-T
- 55-Mbps/155-Mbps & 622-Mbps ATM
- 4-Mbps/16-Mbps Token Ring
- 100-Mbps TP-PMD
- ISDN

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801
- IEC 332-1

Cable Data:

- 305m(1,000ft) pull Box
- 100% Aluminum foil tape screen
- 24 AWG Solid Bare Copper Conductor (0.51mm)
- 4 Pairs, PE Insulation, Average thickness (± 0.03 mm): 0.25
- Insulation Dia (± 0.03 mm): 1.0
- Overall PVC jacket, LSOH & CMR on request (RoHS)
- Outer diameter (± 1.0 mm): 5.1mm
- Average jacket thickness : 0.5mm
- Weight: 11kg/305m
- Minimum bend radius: O.D.*6 - 8
- Maximum pulling tension: 10Kg
- Choice of colors
- Flame Rating: CM, CMR, LSZH
- Twisting lay length (mm): 30 underneath
- Rip cord
- Temperature Range: -20°C to +75°C

Electrical Performance (at 100 MHz):

- 1.0-100.0 MHz Impedance: 100 ± 15 ohms
- 1.0-100.0 MHz Impedance Delay ≤ 45
- Pair to ground capacitance unbalance (PF/100m) 330Max
- Conductor DC resistance 20% (ohms/km) ≤ 93.8
- Resistance unbalance (5%)
- Test object: jacket
- Test material: PVC
- Before tensile strength (Mpa) ≥ 13.8
- Aging Elongation (%): ≥ 100
- Aging condition ($^{\circ}\text{C} \times \text{hrs}$): 100x240
- After tensile strength (Mpa): $\geq 85\%$ of unaged
- Aging elongation (%): $\geq 50\%$ of unaged
- Cold bend ($-20 \pm 2^{\circ}\text{C} \times 4\text{hrs}$): no crack

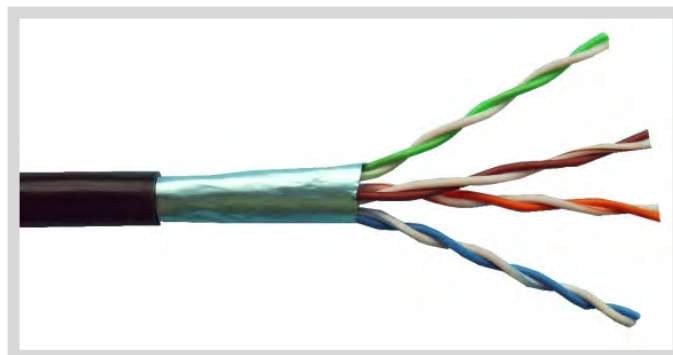
Electronic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL-FEXT Db/100m	RL db
1.0	2.0	65.3	63.0	62.3	63.8	60.8	20.0
4.0	4.1	56.3	52.0	53.3	51.7	48.7	23.0
8.0	5.8	51.8	46.0	48.8	45.7	42.7	24.5
10.0	6.5	50.3	44.0	47.3	43.8	40.8	25.0
16.0	8.2	47.3	39.0	44.3	39.7	36.7	25.0
20.0	9.3	45.8	37.0	42.8	37.7	34.7	25.0
25.0	10.4	44.3	34.0	41.3	35.8	32.8	24.3
31.25	11.7	42.9	31.0	39.9	33.9	30.9	23.6
62.5	17.0	38.4	21.0	35.4	27.8	24.8	21.5
100	22.0	35.3	13.0	32.3	23.8	20.8	20.1

Ordering Information:

Color	PVC	LSOH	CMR
Dark Gray	NB-COP-083	NB-COP-083-LSOH	NB-COP-083-CMR
Blue	NB-COP-084	NB-COP-084-LSOH	NB-COP-084-CMR
Red	NB-COP-086	NB-COP-086-LSOH	NB-COP-086-CMR
Yellow	NB-COP-085	NB-COP-085-LSOH	NB-COP-085-CMR
Green	NB-COP-224	NB-COP-224-LSOH	NB-COP-224-CMR
Orange	NB-COP-225	NB-COP-225-LSOH	NB-COP-225-CMR
Black	NB-COP-226	NB-COP-226-LSOH	NB-COP-226-CMR
White	NB-COP-009	NB-COP-009-LSOH	NB-COP-009-CMR

➤ Cat. 5E FTP 100 MHz Solid Cable (Outdoor Grade)



Application:

- 10BASE-T/100BASE-TX/1000BASE-T
- 55-Mbps/155-Mbps & 622-Mbps ATM
- 4-Mbps/16-Mbps Token Ring
- 100-Mbps TP-PMD
- ISDN

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801
- IEC 332-1

Cable Data:

- 305m(1,000ft) Reel
- 100% Aluminum foil tape screen
- 24 AWG Solid Bare Copper Conductor (0.51mm)
- 4 Pairs, PE Insulation, Average thickness (±0.03mm): 0.25
- Insulation Dia (±0.03mm): 1.0
- Overall PE jacket (RoHS)
- Outer diameter (±1.0mm): 5.4mm
- Average jacket thickness : 0.5mm
- Weight: 11kg/305m
- Minimum bend radius: O.D.*6 - 8
- Maximum pulling tension: 10Kg
- Twisting lay length (mm): 30 underneath
- Rip cord
- Temperature Range: -20°C to +85°C

Electrical Performance (at 100 MHz):

- 1.0-100.0 MHz Impedance: 100± 15 ohms
- 1.0-100.0 MHz Impedance Delay scews≤45
- Pair to ground capacitance unbalance (PF/100m) 330Max
- Conductor DC resistance 20% (ohms/km) ≤93.8
- Resistance unbalance (5%)
- Test object: jacket
- Test material: PVC
- Before tensile strength (Mpa) ≥13.8
- Aging Elongation (%): ≥ 100
- Aging condition (°Cxhrs): 100x240
- After tensile strength (Mpa): ≥85% of unaged
- Aging elongation (%): ≥50% of unaged
- Cold bend (-20±2 °Cx 4hrs): no crotch

Electronic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL-FEXT Db/100m	RL db
1.0	2.0	65.3	63.0	62.3	63.8	60.8	20.0
4.0	4.1	56.3	52.0	53.3	51.7	48.7	23.0
8.0	5.8	51.8	46.0	48.8	45.7	42.7	24.5
10.0	6.5	50.3	44.0	47.3	43.8	40.8	25.0
16.0	8.2	47.3	39.0	44.3	39.7	36.7	25.0
20.0	9.3	45.8	37.0	42.8	37.7	34.7	25.0
25.0	10.4	44.3	34.0	41.3	35.8	32.8	24.3
31.25	11.7	42.9	31.0	39.9	33.9	30.9	23.6
62.5	17.0	38.4	21.0	35.4	27.8	24.8	21.5
100	22.0	35.3	13.0	32.3	23.8	20.8	20.1

Ordering Information:

Color	P/N
Black	NB-COP-172

➤ Cat.5E 100-MHz, 4 Pair FTP Patch Cords



Application:

- 10Base-T Ethernet (IEEE802.3)
- Fast Ethernet (IEEE 802.3u)
- ATM 155
- Token Ring
- TP-PMD Audio
- 1000Base-T
- Voice

Industry Standard:

- Verified to TIA/EIA 568B.2-1
- UL Listed
- ISO/IEC 11801
- IEC 332-1

Cable Data:

- 24 AWG Stranded Copper Conductor
- Foil shielding protects against (EMI) & (RFI)
- 50u" Gold Plated on the plug Contacts
- Temperature Range: -20°C to +75°C
- FR PVC jacket, LSOH on request
- 4 Pairs (FRPE Insulation)
- Molded Boots
- Choice of colors
- Wiring: T568B

Electronic Characteristics:

Frequency MHz	Attenuation Db/100m	NEXT db	ACR db/100m	P.Sum NEXT db	EL-FEXT db/100m	PS EL-FEXT Db/100m	RL db
10.0	6.5	50.3	44.0	47.3	43.8	40.8	25.0
31.25	11.7	42.9	31.0	39.9	33.9	30.9	23.6
62.5	17.0	38.4	21.0	35.4	27.8	24.8	21.5
100	22.0	35.3	13.0	32.3	23.8	20.8	20.1

Ordering Information:

Length	White	Blue	Green	Red	Gray
1M	NB-COP-034	NB-COP-037	NB-COP-113	NB-COP-117	NB-COP-121
2M	NB-COP-035	NB-COP-038	NB-COP-114	NB-COP-118	NB-COP-122
3M	NB-COP-036	NB-COP-039	NB-COP-115	NB-COP-119	NB-COP-123
5M	NB-COP-125	NB-COP-112	NB-COP-116	NB-COP-120	NB-COP-124

➤ Cat.5e FTP RJ45 Plug

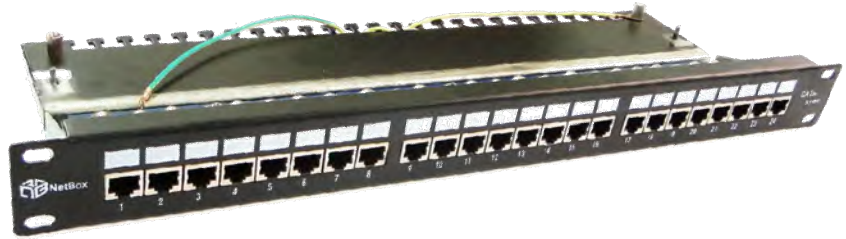
Product Description:

- Housing: Polycarbonate
- Contact: Copper alloy 50u"gold plated over nickel
- 24-26 AWG stranded & solid wire
- Durability: 750 cycles Min.
- Meet or exceed Cat5e specifications
- Use with the universal RJ crimp tool



P/N: NB-COP-061

➤ Cat.5E FTP Patch Panels



Product Description:

- 24-port 1U patch panel, Cat5e FTP type.
- Cable management and grounding devices are combined in this patch panel.
- Universal wiring, panels are supplied with labeling for both T568A and T568B.
- Connecting: FCC port for Cat5e FTP patch cord and IDC for horizontal distribution in the cables.
- Compatibility: compatible for FTP Cat5e general cable distribution systems.
- 110 and Krone dual type IDC termination.
- RJ45 jack Frame Material: PBT; golden plated phosphor bronze pins; Shielding shell of Rj45 jack; Brass housing with nickel-plated; IDC clip; Tinned phosphor bronze pins.
- Use in 100MHz applications.

Environmental:

- Storage : -40°C to +85°C
- Operation: 0°C to 70°C
- Conform to TIA/EIA 568B Category 5e
- Mates with modular plug conforming to FCC Part 68

Electrical:

- Voltage rating: 125 VAC RMS
- Current rating: 1.5 AMP
- Contact resistance: 100 Milliohms Max
- Insulation resistance: 1000 Megohms Min @ 500 VDC
- Dielectric strength: 750 VAC RMS 60Hz, 1Min

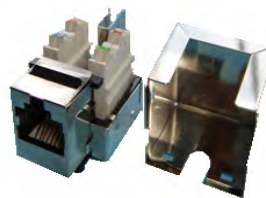
Mechanical:

- Housing material: PBT + 15% GF UL94V-0
- Panel Frame: S45C powder coating in black color
- Contact material: PC UL94V-0 Terminal, Phosphor bronze, TIN plating
- RJ45 Jack life: 750 Times Min
- IDC Life: 200 Times Min
- Wire: AWG 24-26

Ordering Information:

P/N	Description
NB-COP-046	24 port FTP Cat. 5E patch panel

➤ Cat5E FTP Keystone Jack



NB-COP-058



NB-COP-094

Product Description:

- Keystone jack, Cat5e class, FTP Type, fit for connecting application of communication ports in working area.
- Inserting duration: 750 times.
- Punching duration: 250 times.
- Testing condition of transmitting capability: 100MHz.

Environmental:

- Storage : -40°C to +85°C
- Operation: 0°C to 70°C
- Conform to TIA/EIA 568B Category 5e
- Mates with modular plug conforming to FCC Part 68, Subpart F.

Electrical:

- Voltage rating: 125 VAC RMS
- Current rating: 1.5 AMP
- Contact resistance: 100 Milliohms Max
- Insulation resistance: 1000 Megohms Min @ 500 VDC
- Dielectric strength: 750 VAC RMS 60Hz, 1Min

Mechanical:

- Shield Material: Brass T=0.30mm Nickel Plating
- Housing Material: PC UL94V-0
- Insert Material: Flame Retardancy ABS UL94V-0
- PCB Material : FR-4 Thickness: 1.6mm
- Contact Material: Phosphor bronze stamp pin T=0.35mm
- IDC Contact Material: Phosphor Bronze T=0.50mm Nickel Plating
- Wire: AWG 24-26

Ordering Information:

Part No.	Description
NB-COP-058	Cat.5e 110/ krone Right-angle (90°) Keystone Jack, T568A/B, FTP

- 86*86mm type face plate with shutter (1 & 2 port)



NB-COP-192



NB-COP-193

- 86*86mm type face plate with shutter (1, 2 & 4 port)



NB-COP-069

NB-COP-068

NB-COP-067

- 86*86mm type face plate with shutter, 1 & 2 port, (Silver Plating)



NB-COP-198

NB-COP-199

- 114*70mm type face plate (1, 2 & 4 port)



NB-COP-070

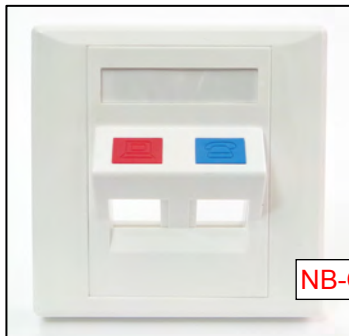


NB-COP-071



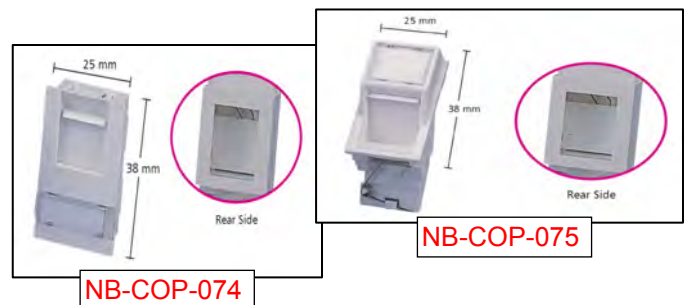
NB-COP-072

- 86*86mm type Angled face plate (2 port)



NB-COP-230

- LJ6C Low Profile Module



NB-COP-074

NB-COP-075

- RJ45 Cable Relief Boots



White	Orange	Gray	Blue	Black	Red	Yellow	Green
NB-COP-062	NB-COP-168	NB-COP-063	NB-COP-064	NB-COP-171	NB-COP-066	NB-COP-096	NB-COP-065