Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!
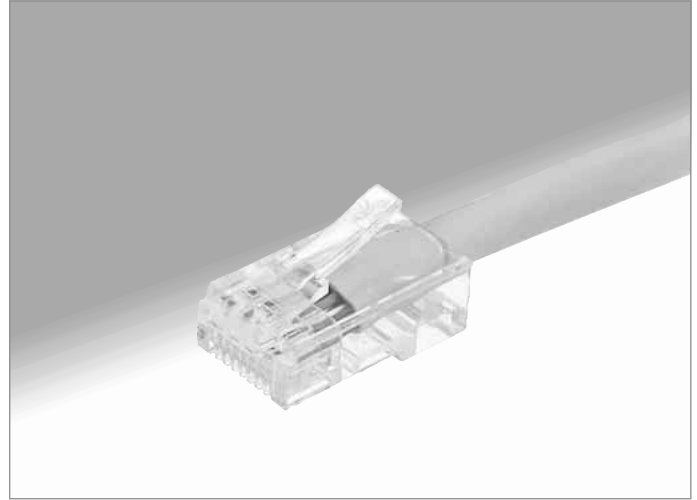
Contact us

Modular Plug Connectors Compliant to Enhanced Category 5 Standards

TM21P Series (Shielded Type)
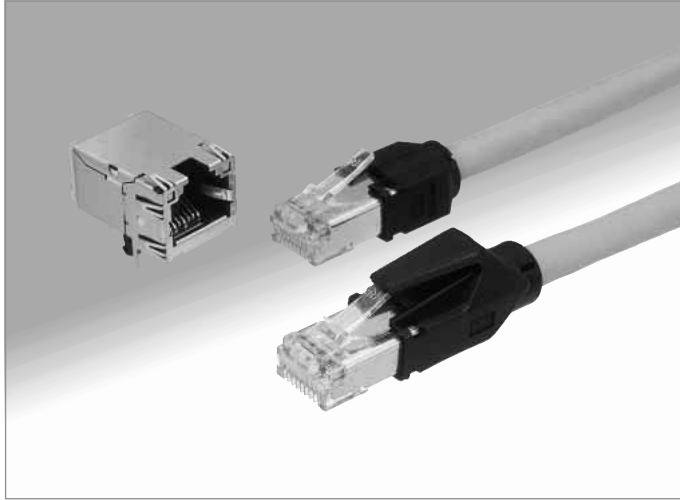
TM22P-88P (Non-shielded Type)

■Features

1. Supports High-Speed LAN Transmission

Conforms to requirements of TIA/EIA-568B data wiring standard, meeting transmission performance of Enhanced Category 5.

Supports Gigabit Ethernet (1000BASE-T) and Fast Ethernet (100BASE-TX) high-speed LAN transmission.

2. EMI protection (TM21✻P-88P)

360° coverage of the engagement area with a metal shield assures protection against electromagnetic interference. When mated with corresponding connector the shield surfaces are securely connected to provide continuous circuit.

3. Protected latch tab (TM21P-88P)

Flexible case extends over the release tab preventing the possibility of breaking-off during handling of the complete cable assembly.
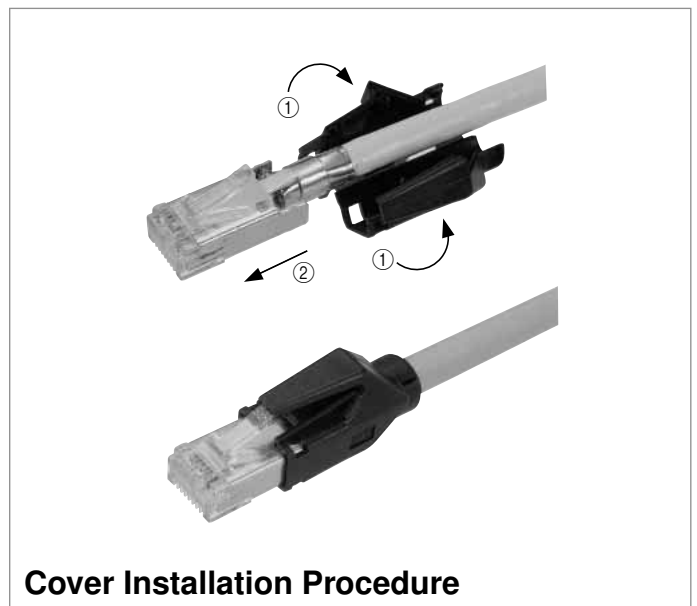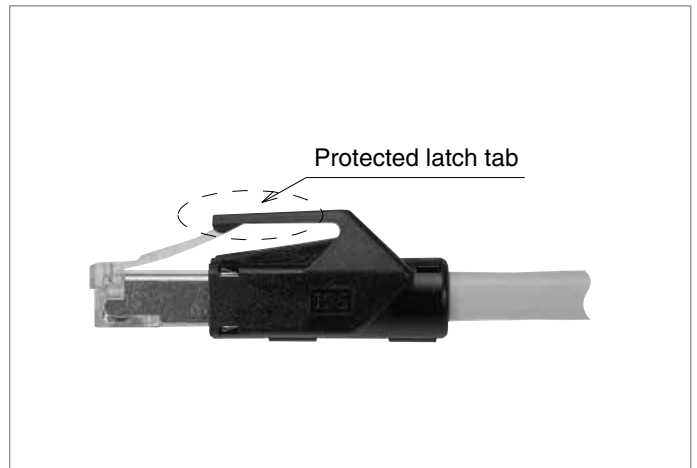
4. Termination of conductors

Self located 24 AWG conductors (solid or stranded) are terminated against pre-inserted contacts using simple tooling.

5. Simplified termination (TM21✻P-88P)

Removeable one piece cover allows easy access to the termination areas.

6. Conforms to the ISO 8877 Standard (ISDN Interface Connector)

Protected latch tab

Cover Installation Procedure

The product information in this catalog is for reference only. Please request the Engineering Drawing for the most current and accurate design information.

TM21P Series●Modular Plug Connectors Compliant to Enhanced Category 5 Standards

■Product Specification

Rating	Current rating 1A	Operating temperature range-25℃ to +60℃ (Note)
	Voltage rating 125 V AC	

Item	Specification	Conditions
1. Insulation resistance	100 M ohms min.	100 V DC
2. Withstanding voltage (between adjacent contacts)	No flashover or insulation breakdown	500 V AC / one minute
3. Withstanding voltage (between contact and shield)	No flashover or insulation breakdown	1500 V AC / one minute
4. Contact resistance	230 m ohms max.	100mA DC
5. Vibration	No electrical discontinuity of 5 ms or more Contact resistance: 250m ohms max.	Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, 2 hours / 3 axis
6. Shock	No electrical discontinuity of 5 ms. min. Contact resistance: 250m ohms max.	Acceleration of 490 m/s², 11 ms duration, sine half-wave waveform, 3 cycles in each of the 3 axis
7. Durability (mating/un-mating)	Contact resistance: 250m ohms max.	200
8. Temperature cycle	Contact resistance: 250 m ohms max. Insulation resistance: 100 M ohms min.	Temperature: -55℃→+5℃ to +35℃→+85℃→+5℃ to +35℃ Duration: 30→5→30→5(Minutes) 5 cycles
9. Humidity	Contact resistance: 250 m ohms max. Insulation resistance: 1 M ohms min. (High humidity) Insulation resistance: 10 M ohms min. (Dry state)	500 hours at temperature of 40℃ and humidity of 90% to 95%
10. Salt Spray	Contact resistance: 250 m ohms max.	Exposed to density 5% salt water for 48 hours

Note :Includes temperature rise caused by current flow.

■Materials

Part	Material	Finish	Remarks
Insulator	Polycarbonate	Color: Clear	UL94V-2
Contacts	Copper alloy	Contact area: Gold plating	――
Shield	Copper alloy	Tin plating	――
Conductor holding tray	Polycarbonate	Color: Clear	UL94V-2
Cover	Polyamide	Color: Light beige (Note)	UL94V-2

Note :Cover available in various colors. Refer to page 3.

■Ordering information

●Plugs- Shielded

TM21 C P - 8 8P
❶ ❷ ❶ ❸ ❹

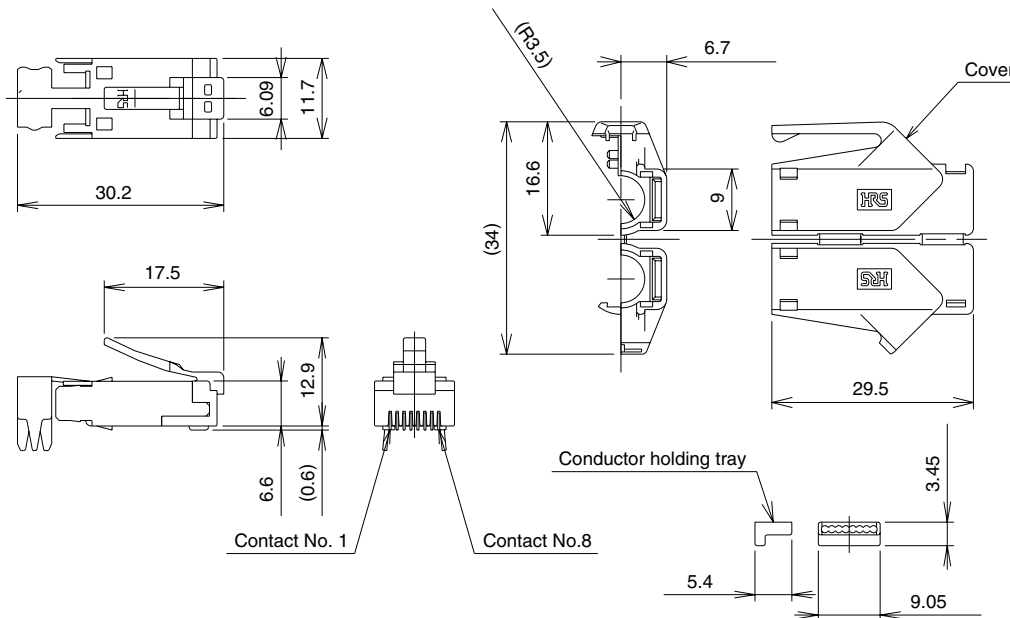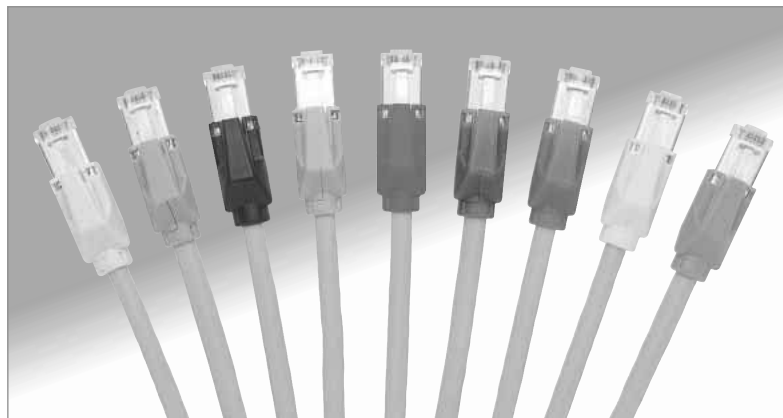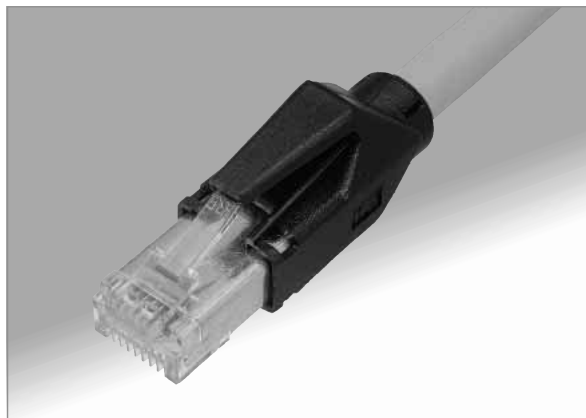| ❶ Series name	TM21P: Shielded
❷ Cover Type	Blank: Protective latch cover C: Short cover
❸ Size	8: For 8 contacts
❹ Inserted contacts	8P: 8

●Plugs - Non-shielded

TM22P - 8 8P
❶ ❷ ❸

❶ Series name	TM22P : Non-shielded
❷ Size	8 : For 8 contacts
❸ Inserted contacts	8P: 8

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TM21P Series●Modular Plug Connectors Compliant to Enhanced Category 5 Standards

■Plug Connectors

●Shielded

Cover

Contact No. 1

Contact No.8

Conductor holding tray

Part Number	CL No.	Cover Color
TM21P-88P	222-2862-9	Light beige
TM21P-88P(02)	222-2862-9-02	Medium gray
TM21P-88P(03)	222-2862-9-03	Black
TM21P-88P(04)	222-2862-9-04	Natural light gray
TM21P-88P(05)	222-2862-9-05	Red
TM21P-88P(06)	222-2862-9-06	Green
TM21P-88P(07)	222-2862-9-07	Blue
TM21P-88P(08)	222-2862-9-08	Yellow
TM21P-88P(09)	222-2862-9-09	Orange

■Cover installed

■Mated with corresponding receptacle (shown for reference only)

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TM21P Series●Modular Plug Connectors Compliant to Enhanced Category 5 Standards
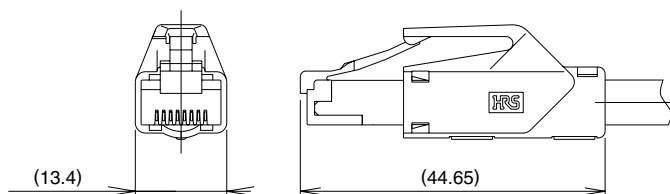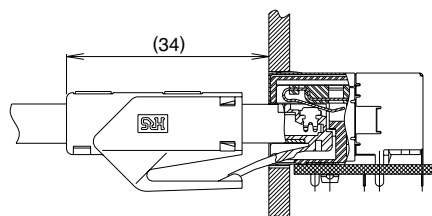
■Plug Connectors
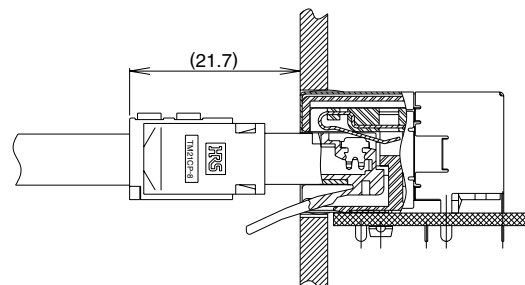
●Shielded-Short Cover
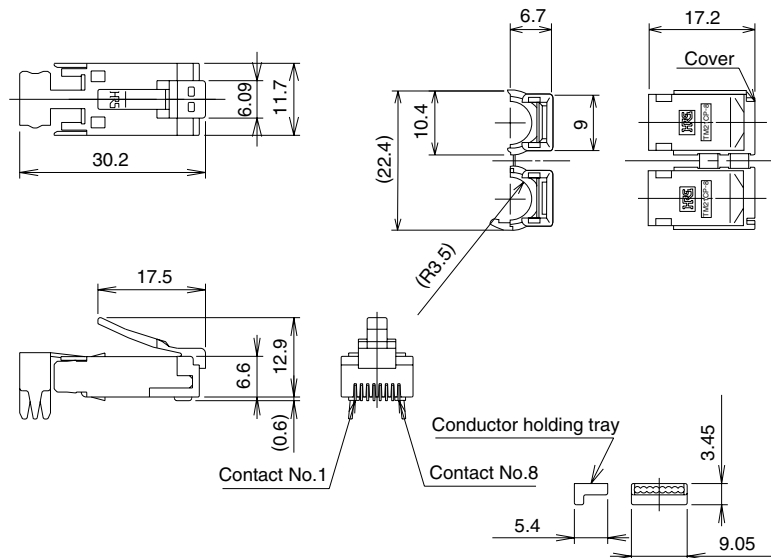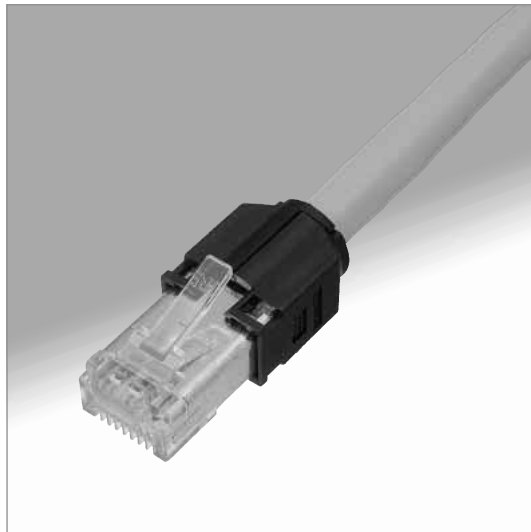
Part Number	CL No.	Cover color
TM21CP-88P(03)	222-2884-1-03	Black

Note: For other colors contact Hirose sales representative.

■Cover installed
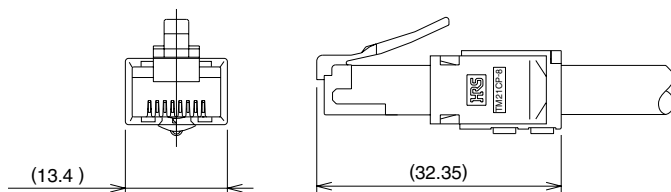
■Mated with corresponding receptacle (shown for reference only)

■Applicable Shielded Cable Specifications

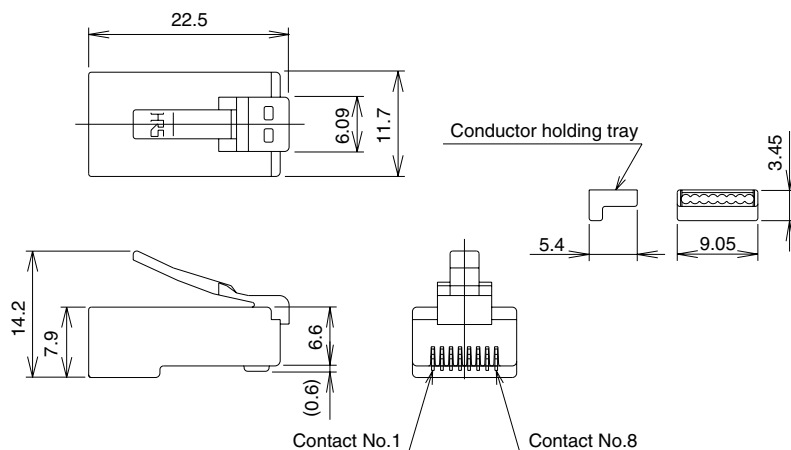| Specifications		
	Conductor	Solid copper conductor: 0.5mm dia.
		Stranded copper conductor: AWG#24 (Dia. 0.2mm x 7 pcs)
	Individual conductor insulation dia.	(0.9mm to 1.0mm)
	Drain wire	AWG#26 (tin coated)
	Overall jacket dia.	(dia. 6.6mm)

Note: For cable termination procedures refer to:
[TM21P-88P Cable Termination Procedure Manual] (ETA-E2349) and [TM21CP-88P Cable termination Procedure Manual] (ETA-E2353).
Some cables may not meet the required service ratings. Contact Hirose sales representative for specific cable applications recommendations.

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TM21P Series●Modular Plug Connectors Compliant to Enhanced Category 5 Standards

■Plug Connectors

●Non-shielded

Part Number	CL No.
TM22P-88P	222-2899-9

■Mated with corresponding receptacle (shown for reference only)
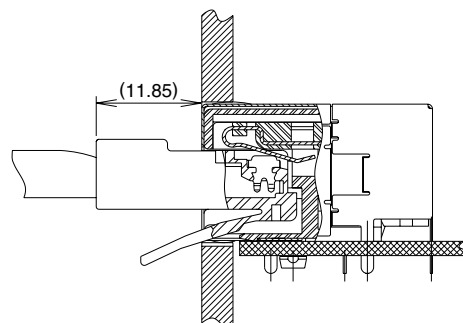
■Applicable Non-shielded Cable Specifications

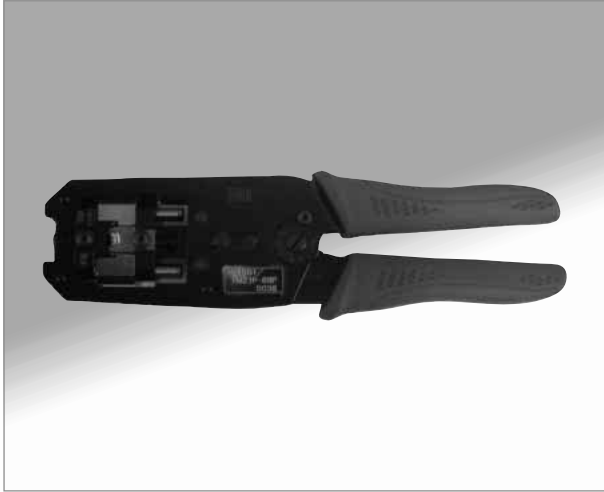| Specifications		
	Conductor	Solid copper conductor: 0.5mm dia.
		Stranded copper conductor: AWG#24 (Dia. 0.2mm x 7 pcs)
	Individual conductor insulation dia.	(0.9mm to 1.0mm)
	Overall jacket dia.	(dia. 5.4mm to 5.7mm)

Note: For cable termination procedures refer to:

[TM22P-88P Cable Termination Procedure Manual] (ETA-E2381).

Some cables may not meet the required service ratings. Contact Hirose sales representative for specific cable applications recommendations.
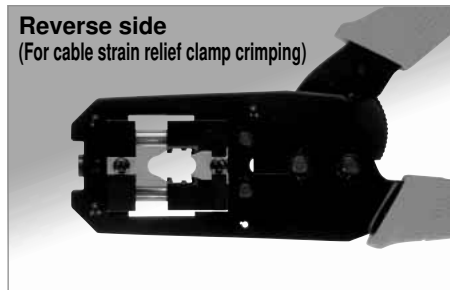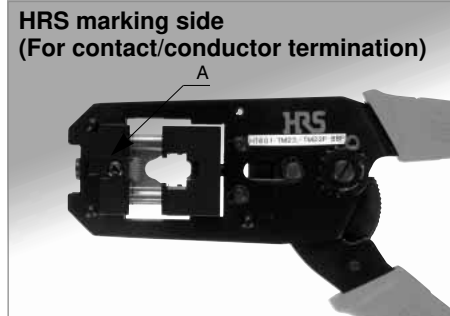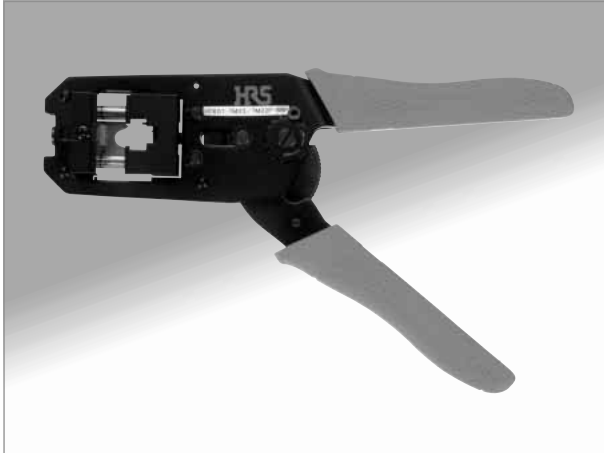
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TM21P Series●Modular Plug Connectors Compliant to Enhanced Category 5 Standards

■Hand termination tools

●For contact/conductor termination (For cable and shield crimping)

Part Number	CL No.	Applicable connector
HT601 / TM21P-88P	902-2133-1	TM21P-88P
		TM21CP-88P

●For contact/conductor termination (Non-shielded connectors)

HRS marking side
(For contact/conductor termination)

A

Reverse side
(For cable strain relief clamp crimping)

Part Number	CL No.	Applicable connector
HT601-TM23/22P-88P	CL902-2128-1	TM22P-88P
		TM23P-88P

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■Technical Documentation
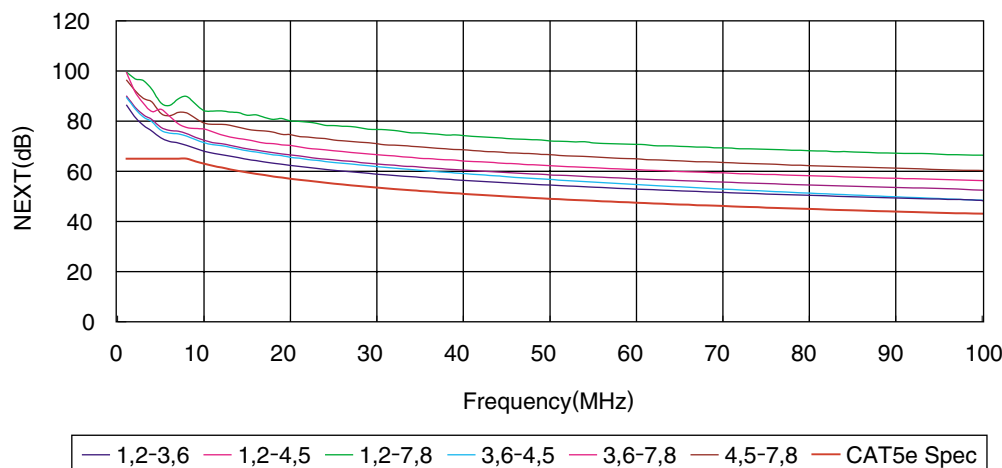
●CAT5e Transmission Characteristics Data

These are the representative values of the various transmission characteristics data for connector assemblies TM21P-88P and TM21R-5C-88-LP when fully mated.
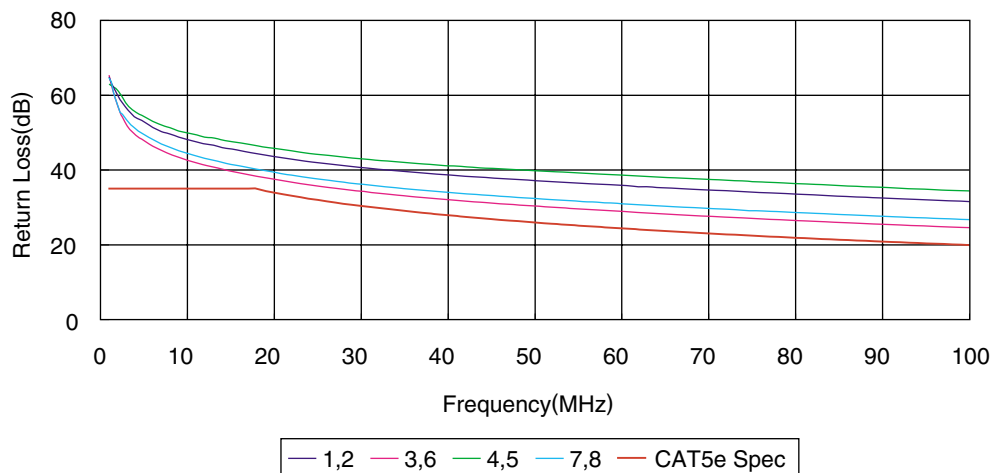
• Signal Attenuation
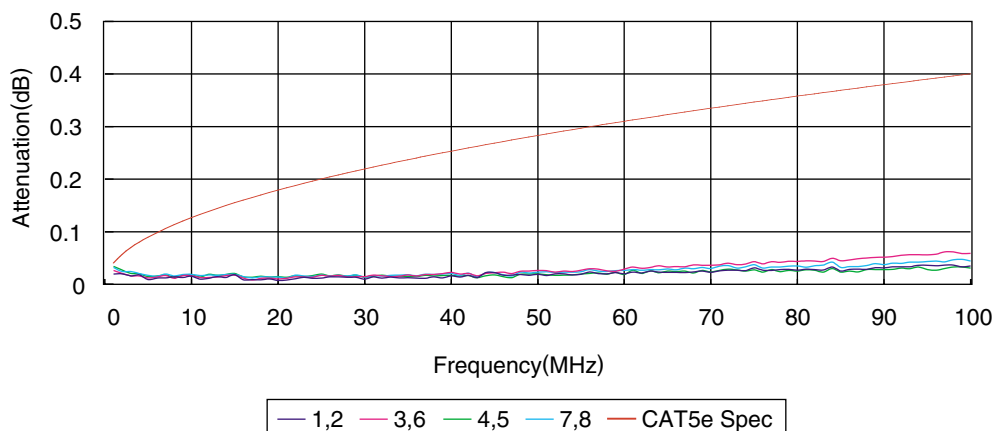
(Each two numbers are for the pair of individual contact position.)
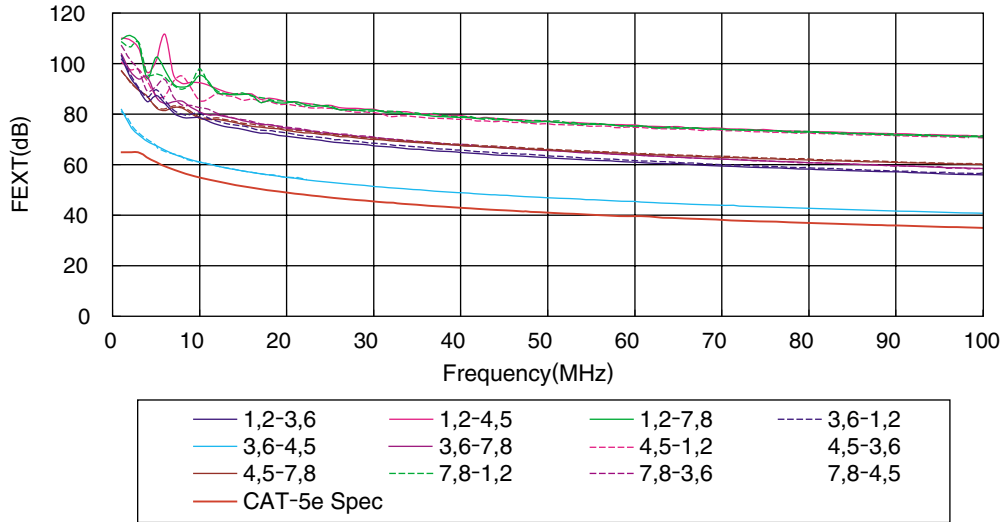
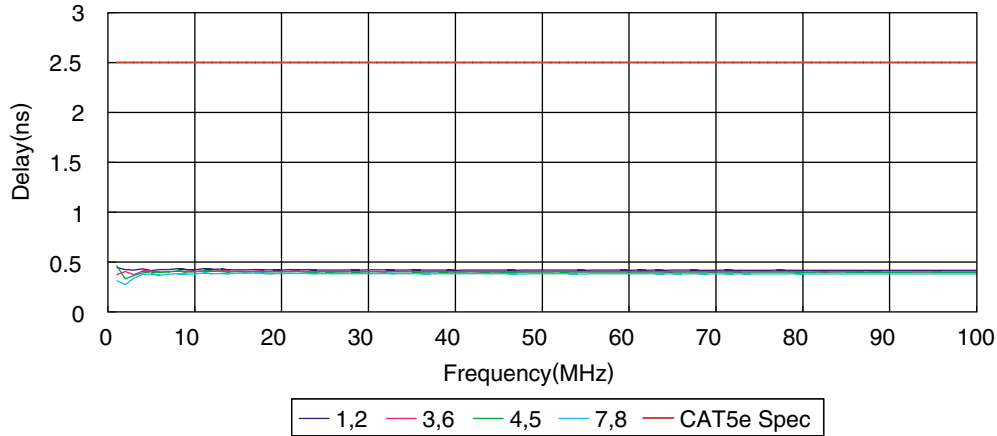### • Near-End Crosstalk Attenuation (NEXT)

• Return Loss

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TM21P Series●Modular Plug Connectors Compliant to Enhanced Category 5 Standards

• Far-End Crosstalk Attenuation (FEXT)

—— 1,2-3,6	—— 1,2-4,5	—— 1,2-7,8	----- 3,6-1,2
—— 3,6-4,5	—— 3,6-7,8	----- 4,5-1,2	4,5-3,6
—— 4,5-7,8	----- 7,8-1,2	----- 7,8-3,6	7,8-4,5
—— CAT-5e Spec			

(Each two numbers are for pair of individual contact position.)

• Propagation Delay

—— 1,2 —— 3,6 —— 4,5 —— 7,8 —— CAT5e Spec

• Propagation Delay skew

—— Measurement Value —— CAT5e Spec