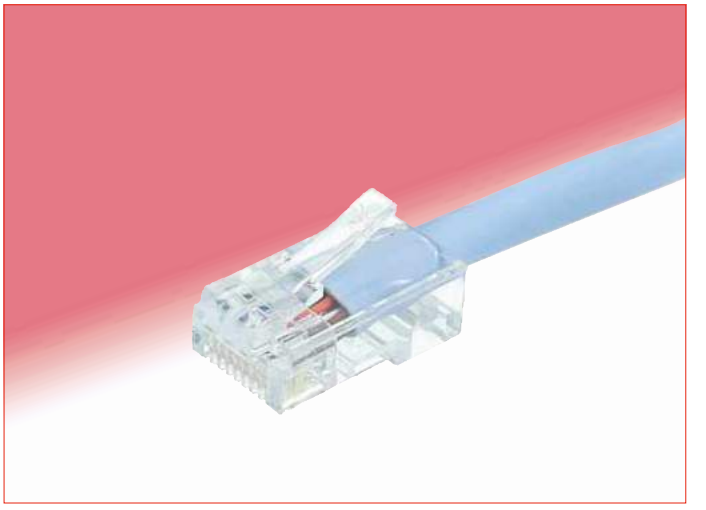
Modular Plug Connectors Compliant to Enhanced Category 5 Standards

TM21P Series (Shielded Type)



TM22P-88P (Non-shielded Type)



■Features

1. Supports High-Speed LAN Transmission

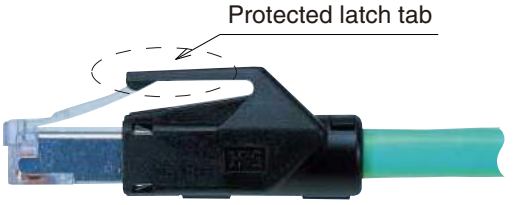
Conforms to requirements of TIA/EIA-568B data wiring standard, meeting transmission performance of Enhanced Category 5.
Supports Gigabit Ethernet (1000BASE-T) and Fast Ethernet (100BASE-TX) high-speed LAN transmission.

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.



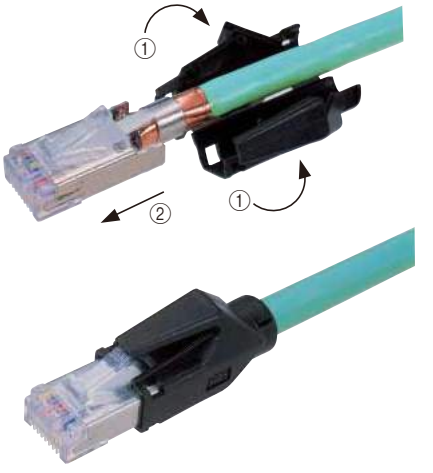
4. Termination of conductors

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)



Cover Installation Procedure

■Applications

Telecom Hubs, Routers, Bridges and ATM Transmission Equipment, Ethernet Switches and Networking Equipment, Test and Measurement Equipment and other equipment requiring this type of simple and reliable connection.

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In cases where the application will demand a high level of reliability, such as automotive, please contact a company representative for further information.

■Product Specification

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

Item	Specification	Conditions
1. Insulation resistance	100MΩ min.	100V DC
2. Withstanding voltage (between adjacent contacts)	No flashover or insulation breakdown	500V AC / 1minute
3. Withstanding voltage (between contact and shield)	No flashover or insulation breakdown	1500V AC / 1minute
4. Contact resistance	230mΩ max.	100mA DC
5. Vibration	No electrical discontinuity of 5 μsec min. Contact resistance : 250mΩ max.	Frequency : 10 to 55Hz, single amplitude of 0.75mm, 5 min/cycle, 10 times for 3 directions
6. Shock	No electrical discontinuity of 5 μsec min. Contact resistance : 250mΩ 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 : 250mΩ max.	200
8. Temperature cycle	Contact resistance : 250mΩ max. Insulation resistance : 100MΩ min.	Temperature : -55℃→+5℃ to +35℃→+85℃→+5℃ to +35℃ Duration : 30→5→30→5(Minutes) 5 cycles
9. Humidity	Contact resistance : 250mΩ max. Insulation resistance : 1MΩ min. (High humidity) Insulation resistance : 10MΩ min. (Dry state)	500 hours at temperature of 40℃ and humidity of 90% to 95%
10. Salt Spray	Contact resistance : 250mΩ max.	Exposed to density 5% salt water for 48 hours

Note : Includes temperature rise caused by current flow.

■Materials / Finish

Part	Material	Finish	Remarks
Insulator	Polycarbonate	Color : Clear	UL94V-2
Contacts	Copper alloy	Contact area : Gold plating 1.27μm	——
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.

■Product Number Structure

Refer to the chart below when determining the product specifications from the product number.
Please select from the product numbers listed in this catalog when placing orders.

●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

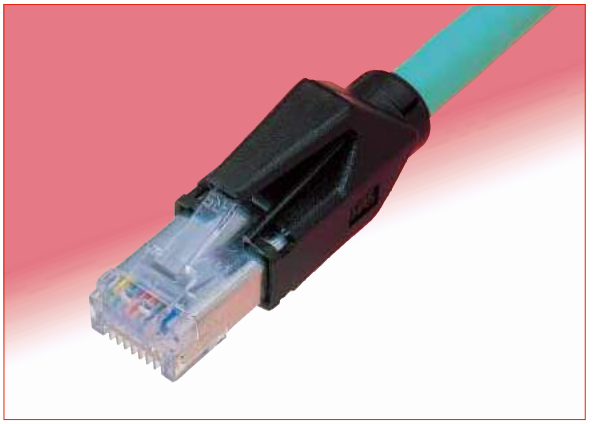
TM22P - 8 8P
❶ ❷ ❸

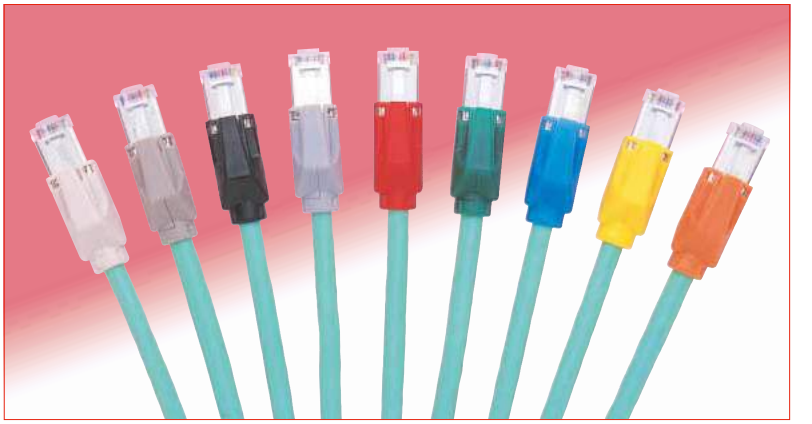
❶ Series name	TM22P : Non-shielded
❷ Size	8 : For 8 contacts
❸ Inserted contacts	8P: 8

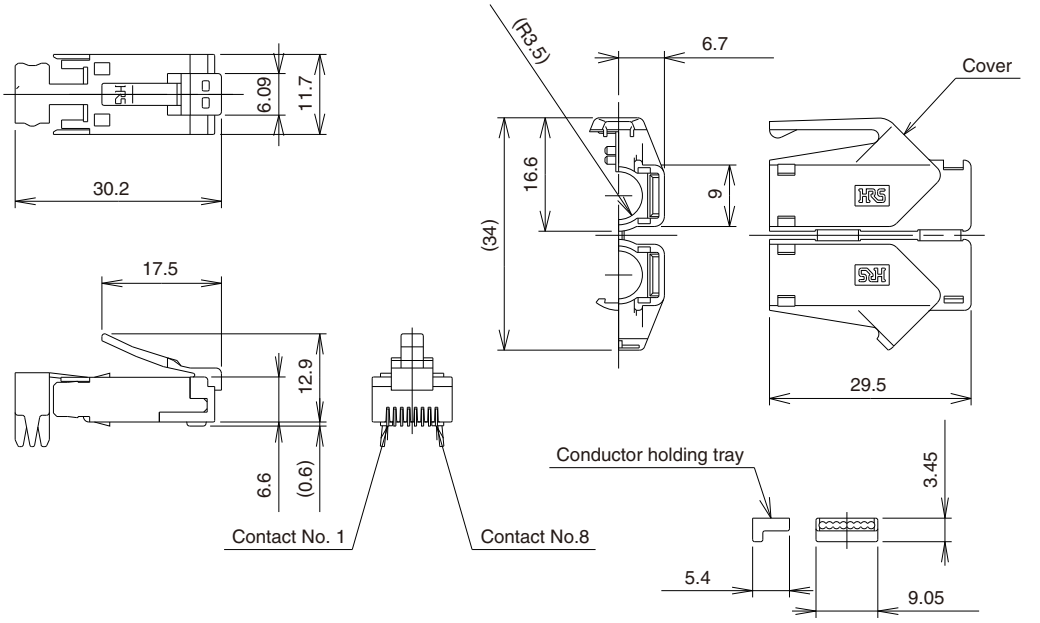
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■Plug Connectors

●Shielded

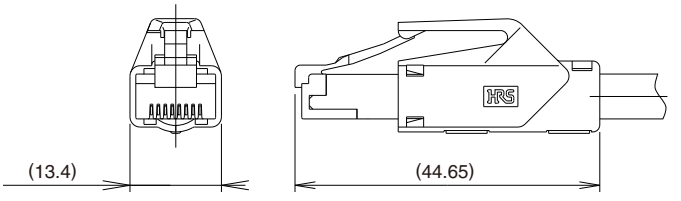




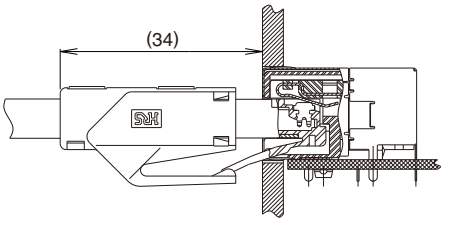


Part No.	HRS No.	Cover Color	Remarks	RoHS
TM21P-88P	222-2862-9 00	Light beige	Plug unit and Cover	YES
TM21P-88P(11)	222-2862-9 11	Light beige	Cover	
TM21P-88P(12)	222-2862-9 12	Medium gray	Cover	
TM21P-88P(13)	222-2862-9 13	Black	Cover	
TM21P-88P(14)	222-2862-9 14	Natural light gray	Cover	
TM21P-88P(15)	222-2862-9 15	Red	Cover	
TM21P-88P(16)	222-2862-9 16	Green	Cover	
TM21P-88P(17)	222-2862-9 17	Blue	Cover	
TM21P-88P(18)	222-2862-9 18	Yellow	Cover	
TM21P-88P(19)	222-2862-9 19	Orange	Cover	

◆Cover installed



◆Mated with corresponding receptacle (shown for reference only)

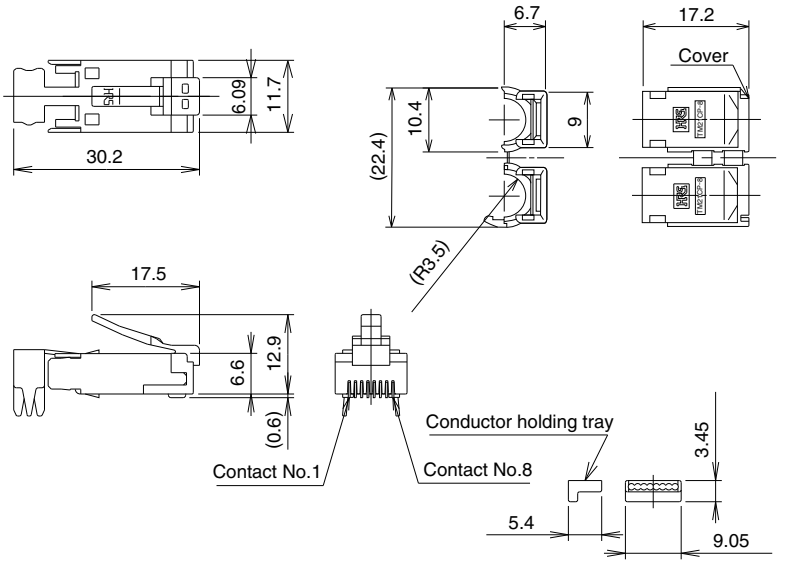


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■Plug Connectors

●Shielded-Short Cover

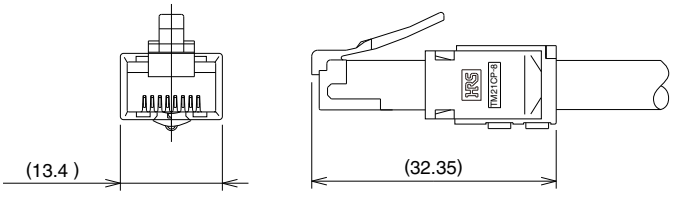




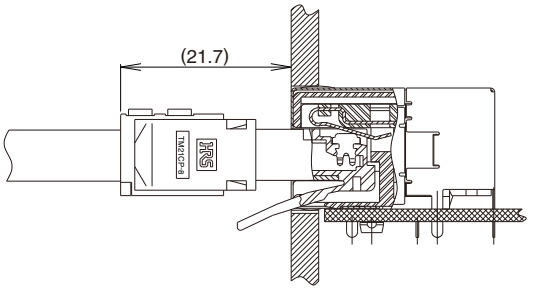
Part No.	HRS No.	Cover color	RoHS
TM21CP-88P(03)	222-2884-1 03	Black	YES

Note : For other colors contact Hirose sales representative.

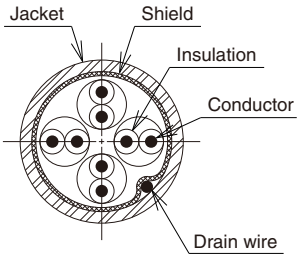
◆Cover installed



◆Mated with corresponding receptacle (shown for reference only)



◆Applicable Shielded Cable Specifications

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

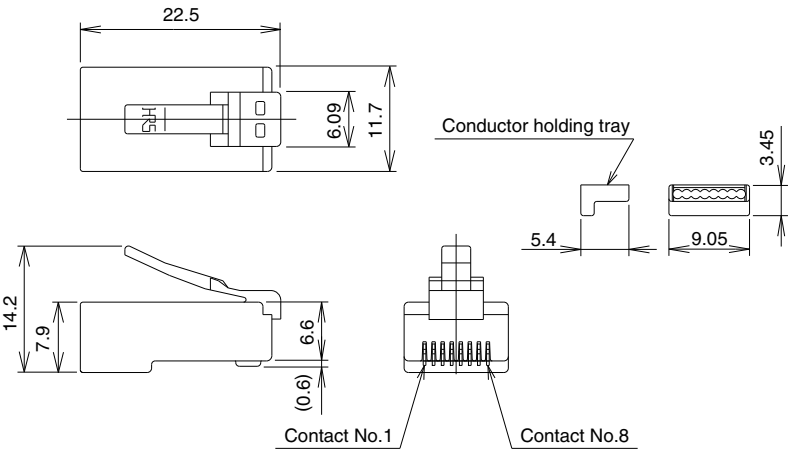
Note : For cable termination procedures refer to:
[TM21P-88P Cable Termination Procedure Manual] (ETA-E2349) and [TM21CP-88P Cable termination Procedure Manual] (ETA-E2353).
Some cables may not meet the required service ratings. Contact Hirose sales representative for specific cable applications recommendations.

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■Plug Connectors

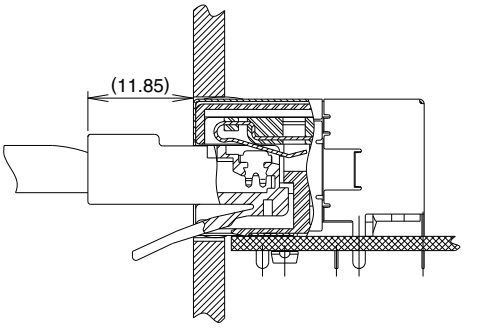
●Non-shielded



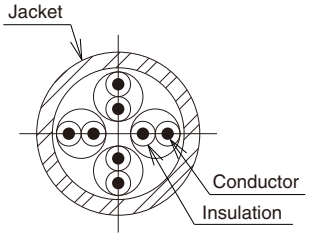


Part No.	HRS No.	RoHS
TM22P-88P	222-2899-9	YES

◆Mated with corresponding receptacle (shown for reference only)



◆Applicable Non-shielded Cable Specifications

Specifications		
	Conductor	Solid copper conductor : 0.5mm dia.
		Stranded copper conductor : 24 AWG (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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◆Hand termination tools

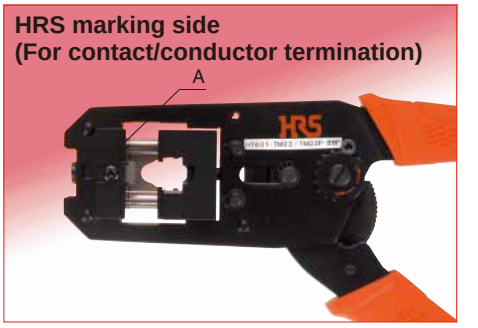
●For contact/conductor termination (For cable and shield crimping)

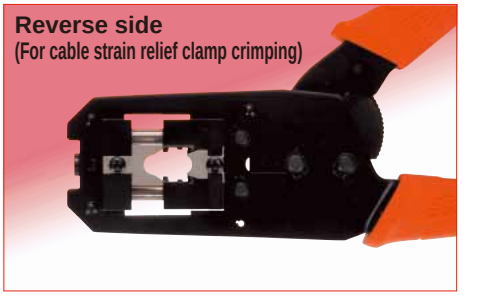


Part No.	HRS No.	Applicable connector
HT603/TM21P-88P	902-2532-0	TM21P-88P TM21CP-88P

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







Part No.	HRS No.	Applicable connector
HT601-TM23/22P-88P	902-2128-1	TM22P-88P
		TM23P-88P

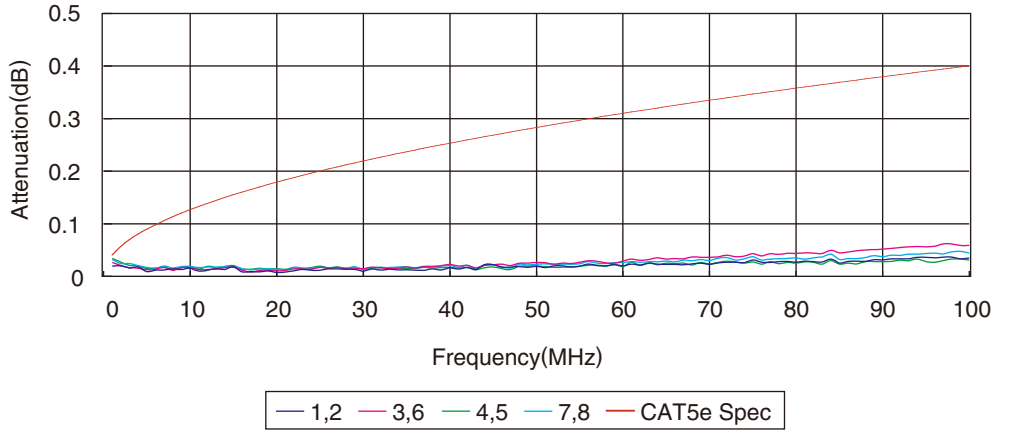
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Technical Documentation

●CAT5e Transmission Characteristics Data

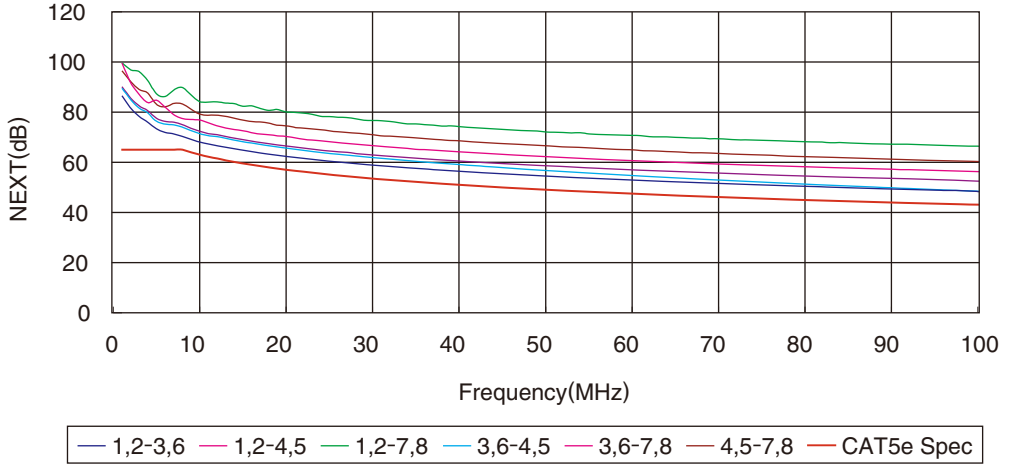
These are the representative values of the various transmission characteristics data for connector assemblies TM21P-88P and TM21R-5C-88-LP when fully mated.

• Signal Attenuation

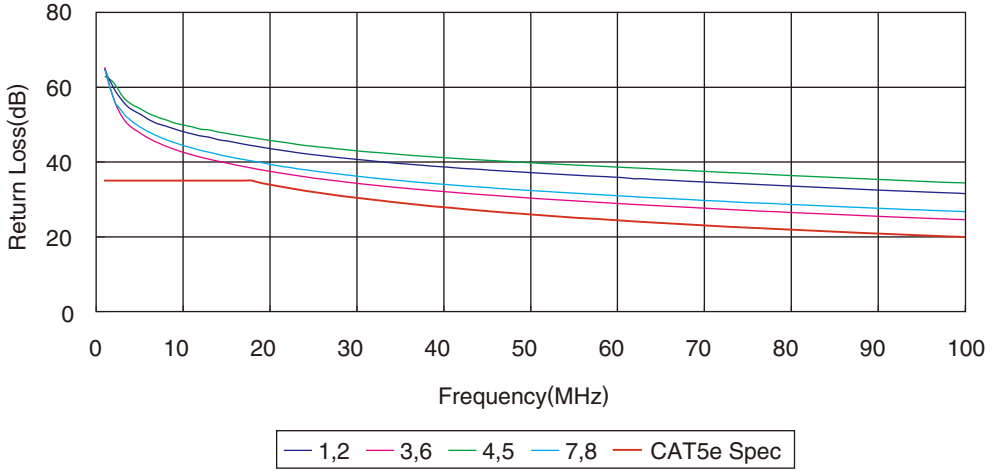


(Each two numbers are for the pair of individual contact position.)

• Near-End Crosstalk Attenuation (NEXT)

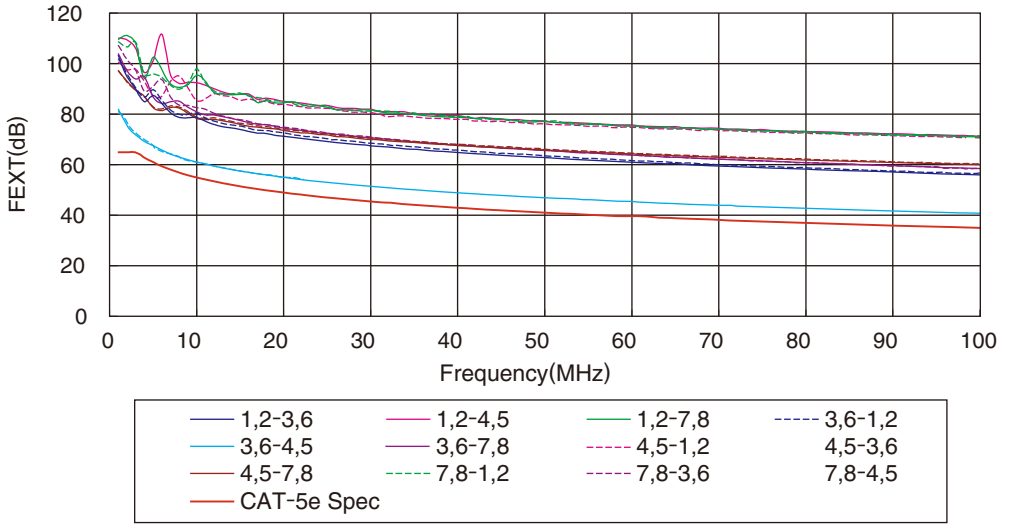


• Return Loss



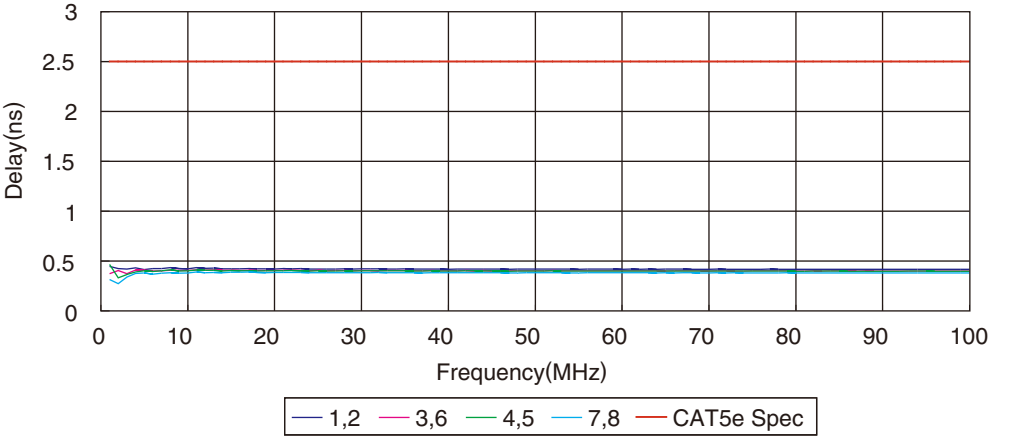
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• Far-End Crosstalk Attenuation (FEXT)

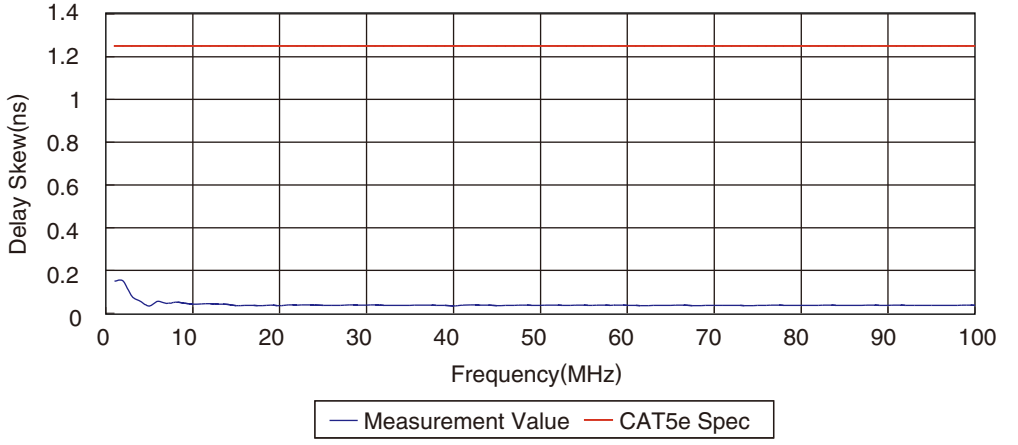


(Each two numbers are for pair of individual contact position.)

• Propagation Delay



• Propagation Delay skew



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2-6-3,Nakagawa Chuoh,Tsuzuki-Ku,Yokohama-Shi 224-8540,JAPAN
https://www.hirose.com/

The characteristics and the specifications contained herein are for reference purpose. Please refer to the latest customer drawings prior to use.
The contents of this catalog are current as of date of 02/2022. Contents are subject to change without notice for the purpose of improvements.