

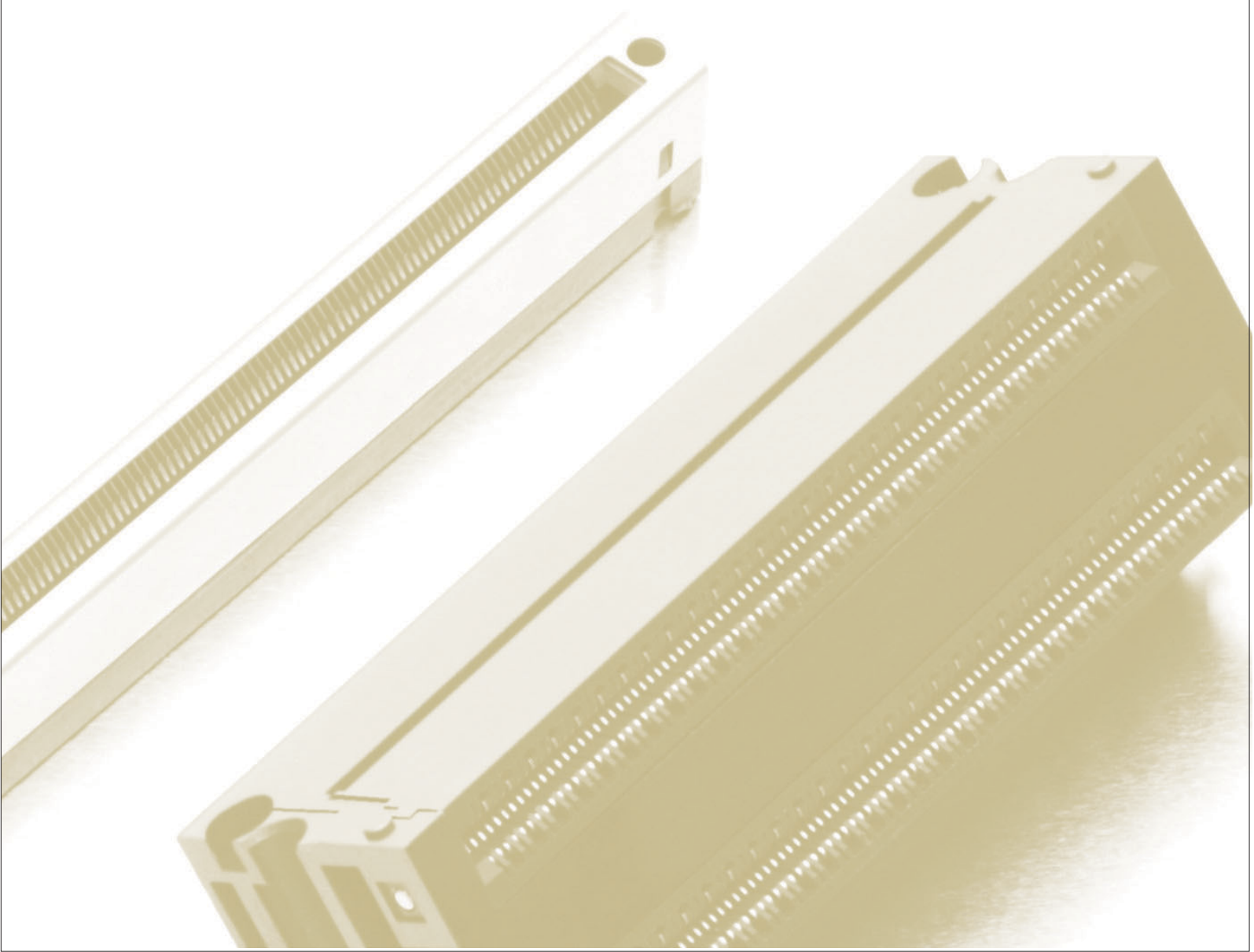
# CN074 Series

AdvancedMC Connector for AdvancedTCA



# CN080

AdvancedMC Connector for MicroTCA



# CN074 Series    AdvancedMC Connector for AdvancedTCA

## Supports 12.5Gbps transmission for telecom core applications

CN074 supports data transfer between AdvancedMC and AdvancedMC Carrier Board (blade) at 12.5Gbps and beyond, optimizing the performance of the AdvancedTCA system.  
CN074 is PICMG AMC.0 compliant.

## Technologies behind the high-speed connectivity: CMT and YFLEX

The high-speed connectivity is achieved by combining our unique connector-mounting technology, CMT (Compression Mount Technology), and our patented flexible circuit board, YFLEX. The combination of CMT and YFLEX reduces insertion loss and cross talk to the absolute minimum, ensuring data transfer rates of 12.5Gbps and beyond with minimal signal loss.

## Covers full range of AdvancedMCs but also allows customization

CN074 not only covers the full range of standard AdvancedMCs but also allows for design modifications to meet your specific needs.

- Differential impedance of 100±10Ω
- Low cross talk
- GR-1217-CORE compliant
- RoHS compliant



CN074-085-0003



CN074-170-0005



CN074-170-0006



CN074-340-0001

### Specifications

	CN074-085-0003	CN074-170-0005	CN074-170-0006	CN074-340-0001
Connector Type	B (Basic)	B+ (Extended)	AB (Basic)	A+B+ (Extended)
Carrier Board Type	Conventional	Conventional	Cutaway	Cutaway
Contacts	85	170	170	340
Module Slots	1	1	2	2
Insulation Resistance	100MΩmin. @80VDC			
Withstanding Voltage	80Vrms/min			
Differential Impedance	100±10Ω			
Line Resistance	Differential pair conductors: 375mΩ, General purpose conductors: 90mΩ, Power conductors: 90mΩ, Ground conductors: 60mΩ			
Attenuation	Less than 1dB @8GHz Less than 2dB @12GHz			
Return Loss	Less than 20dB @5GHz Less than 13dB @8GHz			
Cross Talk Ratio	NE&FE Less than 2%			
Operating Temperature	-55℃ to +105℃			
Mating Cycles	200 times			

### Materials

Case	PA9T (UL94V-0) , Black	YFLEX	LCP/Copper, Gold plating over Nickel
Housing	LCP (UL94V-0) , Black	Screw	Stainless
Contact	Copper Alloy, Gold plating over Nickel	Stiffener	Stainless, PA9T (UL94V-0) , Black

## YFLEX

YFLEX is Yamaichi Electronics LCP-based flexible circuit board. In the CN074 connectors, YFLEX is used as a cable that attains high-speed data transmission with minimal signal loss.

# CN080

## AdvancedMC Connector for MicroTCA

### Supports data transfer at 12.5Gbps and beyond for edge applications

CN080 carries data signals at 12.5Gbps and beyond between AdvancedMC and MicroTCA backplane, while complying with the MicroTCA design requirements by having 170 contacts on 0.75mm pitch. CN080 is essential to bring the high-performance and reliability of AdvancedTCA to the MicroTCA system.

### “CMT” realizes outstanding routing capabilities

Our unique connector-mounting technology, CMT (Compression Mount Technology), requires less backplane inner layers, hence offering outstanding routing capabilities to the MicroTCA system.

- Differential impedance of 100±10Ω
- Low cross talk
- GR-1217-CORE compliant
- RoHS compliant



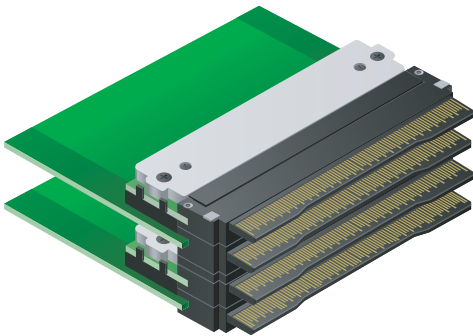
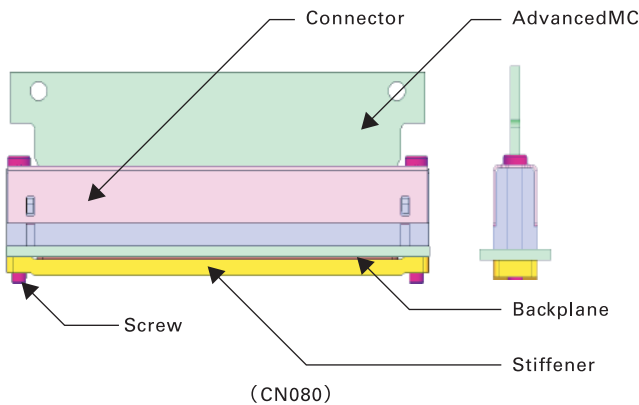
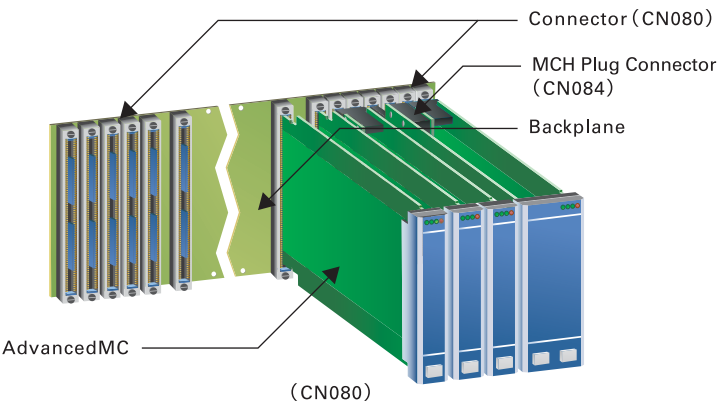
CN080

#### Specifications

	CN080-170-0001
Contacts	170
Insulation Resistance	100MΩmin. @80VDC
Withstanding Voltage	80Vrms/min
Differential Impedance	100±10Ω
Line Resistance	25mΩ
Attenuation	Less than 1dB @6.5GHz Less than 2dB @12GHz
Return Loss	Less than 20dB @5GHz Less than 13dB @8GHz
Cross Talk Ratio	NE&FE Less than 3%
Operating Temperature	-55℃ to +105℃
Mating Cycles	200 times

#### Materials

Housing	LCP (UL94V-0) , Black
Shell	Stainless
Contact	Copper Alloy, Gold plating over Nickel
Screw	Stainless
Stiffener	Stainless, PA9T (UL94V-0) , Black



(CN084)

## CN084 Series MCH Plug Connector (Pre-released)

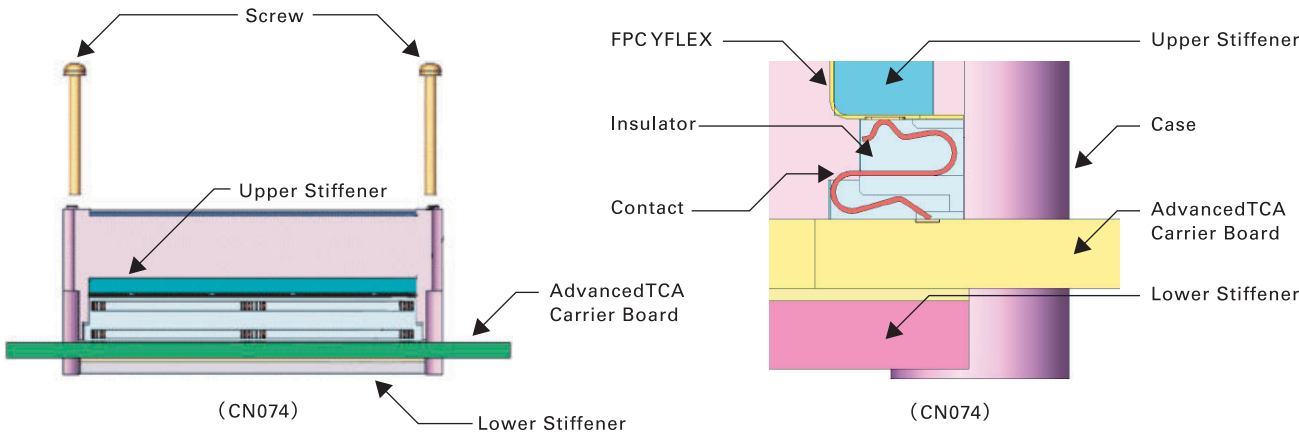
CN084 Series, Yamaichi Electronics MCH Plug Connector, scalable in four increments, has 680 contacts in its maximum configuration and supports transmission beyond 12.5Gbps with more than 200 differential pairs. The connector reduces insertion force between the backplane connectors (CN080) and an MCH Module, as well as effectively controlling mechanical tolerance between them.



Compression Mount Technology: It’s our solution to 12.5Gbps

Compression Mount Technology, or CMT, is a revolutionary connector-mounting technology developed by Yamaichi Electronics as a solution to the functional and design requirements specified by AdvancedTCA and MicroTCA. This technology supports data transfer at 12.5Gbps while accommodating high pin count and large connector dimensions.

The method compresses spring contacts against a printed circuit board (or backplane) and secures the connection using stiffeners and screws, eliminating the need for through-holes or soldering. This minimizes insertion loss and cross talk, providing remarkable data transfer properties including the unprecedented high-speed connectivity. It also offers outstanding routing capabilities because the method requires less inner layers of a printed board. Moreover, CMT allows easy connector removal and re-installation, facilitating maintenance and bringing cost savings.

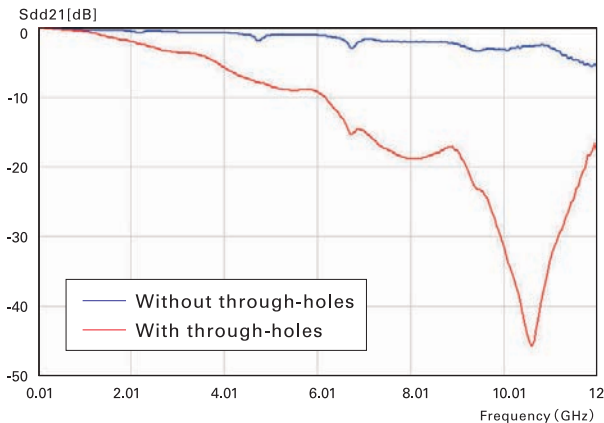


Comparison of mounting technologies

	CMT (compression)	Press Fit (through-holes)	SMT (soldering)
High-speed performance	High	Low	High
Installation & Removal	Easy	Easy	Not easy
Reliability & Durability	High	High	Low
Repairability	High	Low	NA *Not repairable

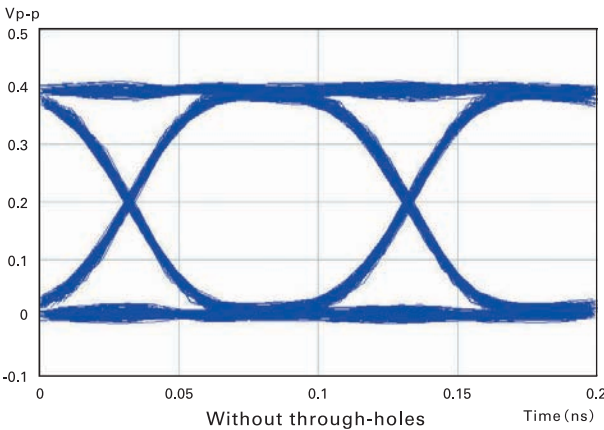
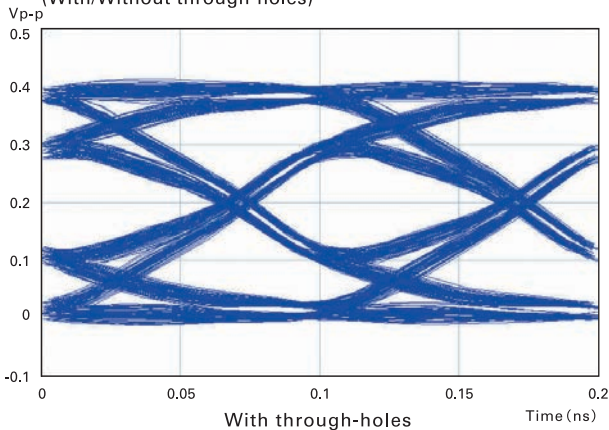
Comparison of insertion loss

(With/Without through-holes)



Comparison of transmission waveforms @12.5Gbps

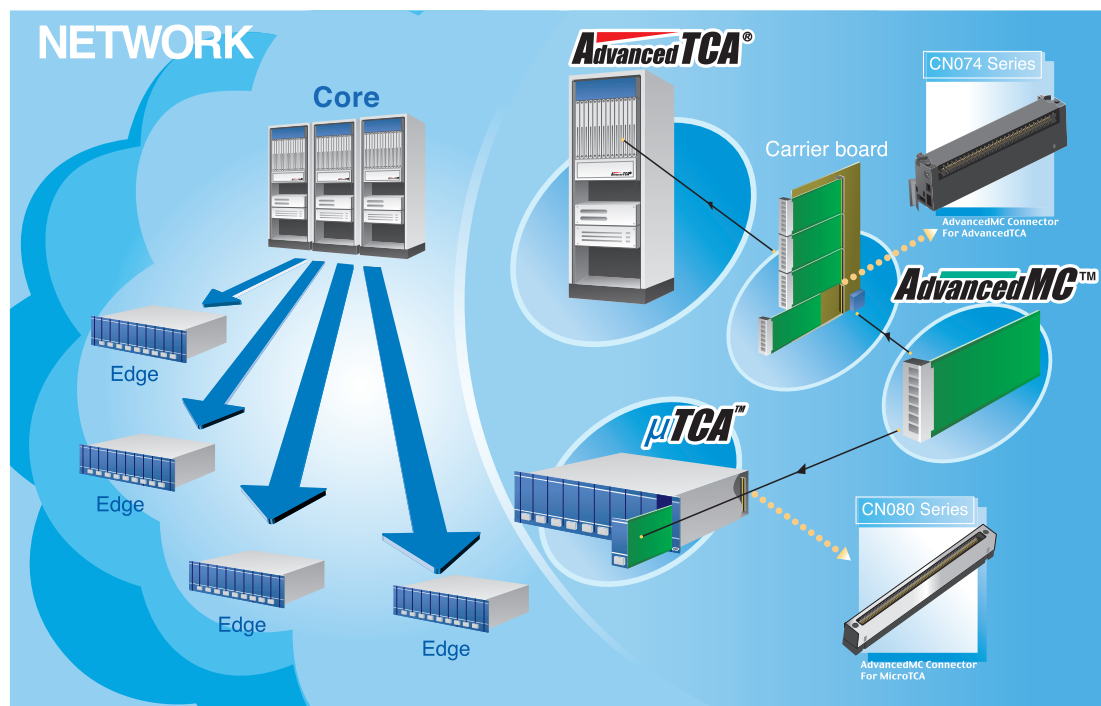
(With/Without through-holes)



# PICMG AdvancedTCA and MicroTCA

## Yamaichi Electronics high-speed & high-frequency technology makes its CN074 & CN080 Series the best choice for next-generation network equipment

AdvancedTCA and MicroTCA are open architectures standardized by more than 100 members of PICMG for next-generation telecommunications. Yamaichi Electronics supports the industry's hottest standards with its CN074 and CN080 Series.



### **PICMG** PCI Industrial Computers Manufacturers Group

PICMG is a U.S.-based consortium where more than 600 computer, telecommunications and related manufactures participate to develop open architectures including AdvancedTCA and MicroTCA.

### **AdvancedMC** Advanced Mezzanine Card

AdvancedMCs are the primary component of AdvancedTCA and MicroTCA that provides these systems with functional elements such as telecom connectivity, processors and mass-storage. The Hot-Swappable feature allows you to install or uninstall the cards directly from the front of AdvancedTCA or MicroTCA shelf without turning off power.

### **AdvancedTCA** Advanced Telecom Computing Architecture

AdvancedTCA is a specification developed by PICMG for carrier-grade telecom applications.

The AdvancedTCA system introduces high-speed inter connect technology and processors while providing core applications with high reliability, availability and serviceability.

An AdvancedTCA shelf accepts 14 AdvancedTCA Carrier Boards (blades) and each board accepts up to eight AdvancedMCs. By merely installing or uninstalling AdvancedMCs on/from the boards, you can easily manage the configuration of your AdvancedTCA system.

### **MicroTCA** Micro Telecom Computing Architecture

MicroTCA is a specification developed by PICMG to incorporate the key elements of AdvancedTCA for edge applications.

Unlike AdvancedTCA, a MicroTCA shelf directly accepts AdvancedMCs through its backplane to save space and installation cost, while maintaining the important features and functions of the AdvancedTCA system. A standard MicroTCA shelf accepts 12 AdvancedMCs.



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**AdvancedTCA® AdvancedMC™ μTCA™**

Specifications in this document are reference values for representative products of each series and may change without prior notice. Since product improvement entails changes to electrical, material and mechanical properties, the purchasing party is strongly encouraged to inquire about the latest specifications before placing a purchase order.

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Issue May 2006 1000 GBS

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