

• • • ept
connectors



Connectors
product overview

Editorial



Good connections have a name: ept



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ept designs, produces and distributes electronic connectors for high quality applications. Founded by Bernhard Guglhör over 45 years ago, we are proud to remain an independent and family owned company. Today, we employ about 1,200 people at six locations worldwide.

Over decades we have built trusting and successful partnerships with our customers, who are our primary focus. Our products and core competencies are used in high-level applications.

With our motto "Precision with Passion" ept stands for the highest quality and reliability under the personal and individual touch of dedicated employees.

We are looking forward to working with you.
Your ept-Team

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Symbols



Definitions

Mating Configurations



Parallel



Perpendicular



Horizontal



Edge Card



Cable-to-Board

Type of Termination



SMT



Press-fit



Through-Hole



Wire Wrap

Application



High Density



Power



HighSpeed



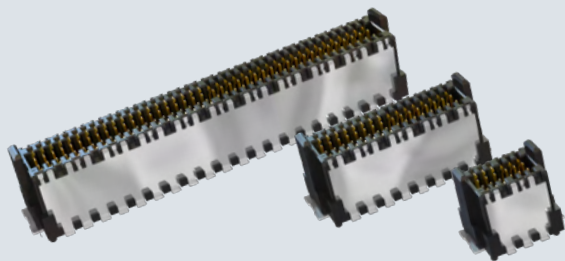
EMC



Rugged



Variability



Zero8

0.8 mm SMT for Board-to-Board Applications

Key Features

| | |
|------------------------|------------------------------|
| Types | see overview |
| Pitch | 0.8 mm |
| Termination technology | SMT |
| Data transfer rate | up to 16 Gbps |
| Durability | 500 mating cycles |
| Operational current | max. 1.7 A at 20°C (52 pins) |
| Approvals | UL, RoHS compliant |

Applications

Board-to-Board (mezzanine) from 6 mm up to 21 mm

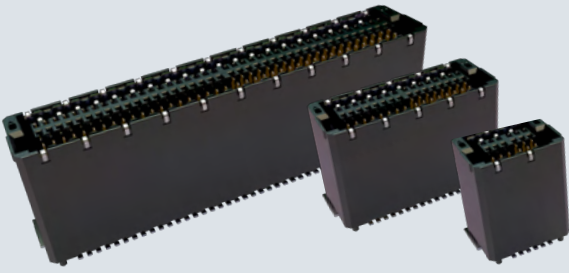
Parallel and perpendicular connection

Shielded and unshielded versions

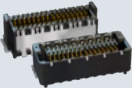


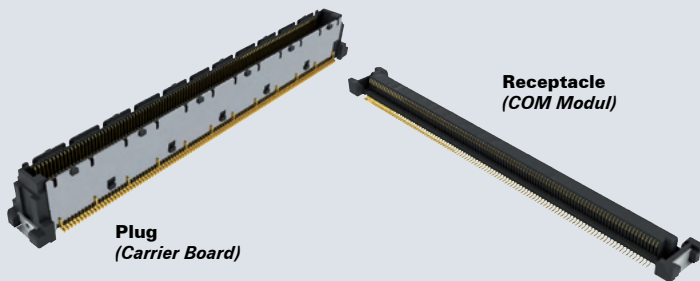
Characteristics

- Versatile through different types, contact numbers and board-to-board distances
- Small through dense pitch
- Shielding for better EMC properties
- HighSpeed up to 16 Gbps



Overview Zero8

| Type | | Height | Number of pins | Mating configuration |
|--|---|-----------------------------------|----------------|-----------------------------|
|  | Plug Socket low-profile | shielded 1.15 mm 4.85 mm | 12 ... 80 | Parallel Perpendicular |
|  | Plug Socket mid-profile | shielded 2.65 mm 7.85 mm | 12 ... 80 | Parallel Perpendicular |
|  | Plug Socket (coming soon) high-profile | shielded 7.15 mm 10.85 mm | 12 ... 80 | Parallel Perpendicular |
|  | Plug x-high | shielded 8.65 mm | 12 ... 80 | Parallel Perpendicular |
|  | Plug Socket angled | shielded | 12 ... 80 | Horizontal Perpendicular |
|  | Plug Socket low-profile | unshielded 1.15 mm 4.85 mm | 12 ... 80 | Parallel Perpendicular |
|  | Plug Socket mid-profile | unshielded 2.65 mm 7.85 mm | 12 ... 80 | Parallel Perpendicular |
|  | Plug Socket (coming soon) high-profile | unshielded 7.15 mm 10.85 mm | 12 ... 80 | Parallel Perpendicular |
|  | Plug x-high | unshielded 8.65 mm | 12 ... 80 | Parallel Perpendicular |
|  | Plug Socket angled | unshielded | 12 ... 80 | Horizontal Perpendicular |



HighSpeed Connectors for COM Express®

Key Features

| | |
|------------------------|---|
| Types | Receptacle (COM Module) Plug 8 mm } (Carrier Board) Plug 5 mm } |
| Number of contacts | 220 or 440 |
| Pitch | 0.5 mm |
| Termination technology | SMT |
| Data transfer rate | 10 Gbps & 16 Gbps |
| Approvals | UL, RoHS compliant |

Applications

COM Express® for 5 mm & 8 mm distance

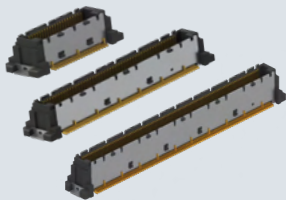
Core Express®

COM Express®

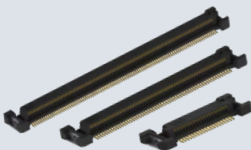
Characteristics

- Intermatability with other manufacturers
- Applications up to 16 Gbps and more possible
- Robust connector design
- Packed in tape & reel or tray

Plug



Receptacle



Flexibility for HighSpeed Board-to-Board

Key Features

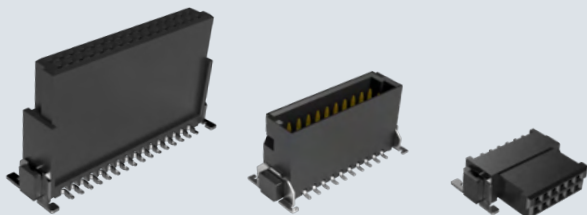
| | |
|------------------------|--------------------------------------|
| Types | Receptacle Plug 5 mm Plug 8 mm |
| Number of contacts | 40, 80, 120, 160 |
| Pitch | 0.5 mm |
| Termination technology | SMT |
| Data transfer rate | 10 Gbps |
| Approvals | UL, RoHS compliant |

Applications

HighSpeed board-to-board
5 mm & 8 mm board-to-board distance
Computer on Module (COM)
16 Gbps optional

Characteristics

- Applications up to 16 Gbps and more
- Individual number of contacts possible
- Robust connector design
- Packed in tape & reel or tray



One27[®]

1.27 mm SMT for Board-to-Board

Key Features

| | |
|------------------------|------------------------------|
| Types | see overview |
| Pitch | 1.27 mm |
| Termination technology | SMT |
| Durability | 500 mating cycles |
| Operational current | max. 1.4 A at 20°C (50 pins) |
| Approvals | UL, RoHS compliant |

Applications

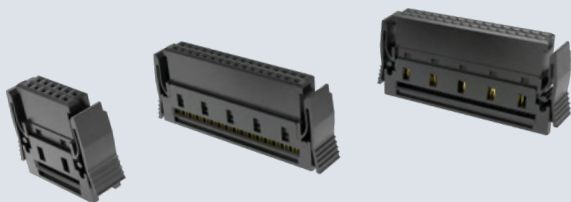
Board-to-board from 8 mm up to 13.8 mm

Parallel and perpendicular connection









IDC link with ribbon cable

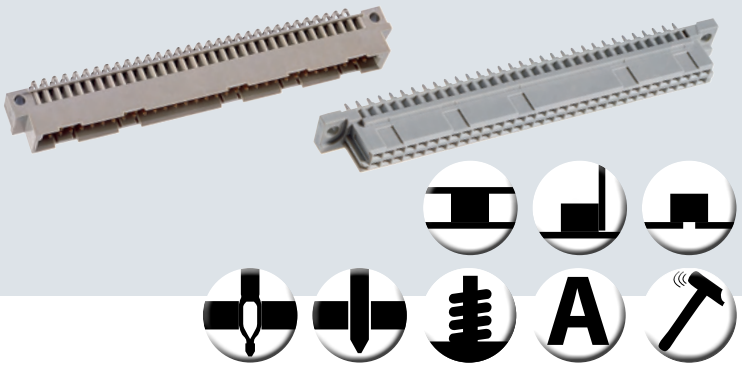
Characteristics

- Versatile through different types and contact numbers
- Small through dense pitch
- Robust through high quality contact design, SMT-fixing, anti-twist protection, insertion chamfers



Overview One27

| Type | Height | Number of pins | Mating configuration |
|---|---------|----------------|--------------------------------------|
|  | 1.75 mm | 12 ... 80 | Parallel Perpendicular Cable |
|  | 3.25 mm | 12 ... 80 | Parallel Perpendicular Cable |
|  | | 12 ... 80 | Horizontal Perpendicular Cable |
|  | 6.25 mm | 12 ... 80 | Parallel Perpendicular |
|  | 9.05 mm | 12 ... 80 | Parallel Perpendicular |
|  | | 12 ... 80 | Horizontal Perpendicular |
|  | | 12 ... 80 | Cable |
|  | | 12 ... 80 | Cable |



DIN 41612

High Variety - Reliable - Well-proven

Key Features

| | |
|------------------------|---------------------------------|
| Types | See overview |
| Durability | 500, 400 or 50 mating cycles |
| Operational current | 1.5 A to 15 A at 20°C |
| Approvals | UL, RoHS compliant, NFF |
| Termination technology | Press-fit, solder, THR |

Applications

Backplane - daughtercards, 19-inch technology (VME)

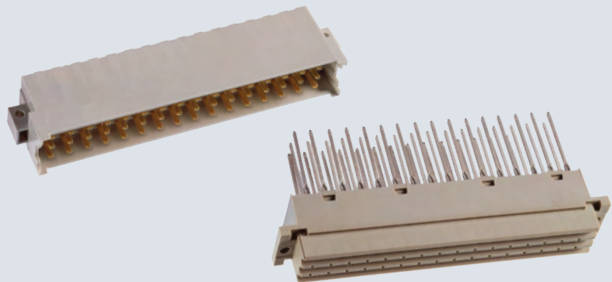
Board-to-board or horizontal

High current



Characteristics

- Reliable and proven connector system
- Special contact arrangements possible, even for low quantities
- Pre-mating and late-mating contacts possible
- Different contact lengths available
- Accessories: Shroud, Board Lock, Coding Keys
- Switching connector for daisy-chaining



Overview of ept's DIN 41612

| Type | Pitch (mm) | max. Number of Contacts | Termination Technology |
|--------------|------------|-------------------------|-----------------------------------|
| B, B/2, B/3 | 2.54 | 64 / 32 / 20 | press-fit, solder, THR, Wire Wrap |
| C, C/2, C/3 | 2.54 | 96 / 48 / 30 | press-fit, solder, THR, Wire Wrap |
| IDC (B/C) | 2.54 | 64 / 96 | IDC |
| Q, Q/2 | 2.54 | 64 / 32 | solder |
| R, R/2, R/3 | 2.54 | 96 / 48 / 30 | press-fit, solder, THR, Wire Wrap |
| M, M/2, M/3 | 2.54 | 78 / 30 / 12 | press-fit, solder |
| D | 5.08 | 32 | press-fit, solder, Wire Wrap |
| E | 5.08 | 48 | press-fit, solder, Wire Wrap |
| F, F low | 5.08 | 48 | press-fit, solder, THR, Wire Wrap |
| G, G low | 5.08 | 64 | press-fit, solder, Wire Wrap |
| H11, H11 low | 5.08 | 11 | solder, faston |
| H15, H15 low | 5.08 | 15 | solder, faston |
| H7/F24 | 5.08 | 7+24 | solder |
| VME 64x | 2.54 | 160 | press-fit |



EC.8

0.8 mm SMT - Edge Card Connector

Key Features

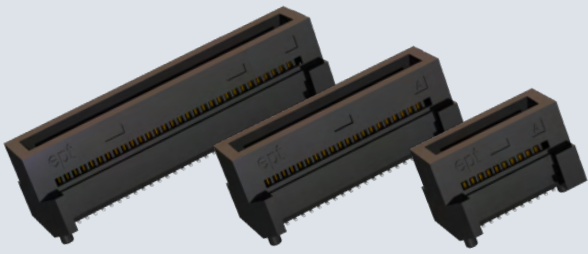
| | |
|------------------------|--|
| Types | see overview |
| Pitch | 0.8 mm |
| Termination technology | SMT |
| Data transfer rate | up to 28 Gbps |
| Durability | 500 mating cycles |
| Operational current | 3,2A @ 20°C (8 of 140 pins) 1,35A @ 20°C (140 pins) |
| Approvals | UL, RoHS compliant |

Applications

HighSpeed Edge Card Connection

Characteristics

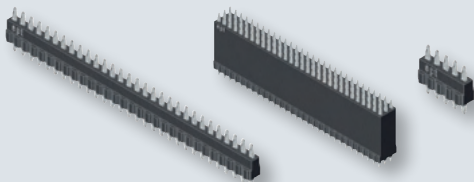
- Versatile pin count variations
- Compact pitch design
- Anti-twist safeguard for pin counts 60 to 200
- HighSpeed transfer rates up to 28 Gbps



Overview EC.8

| | Type | Height | Number of pins | Mating configuration |
|--|--------------------------------|---------|----------------|------------------------|
| | Direct Connector (without key) | 2.05 mm | 20 ... 60 | Perpendicular Edgecard |
| | Direct Connector (with key) | 2.05 mm | 60 ... 200 | Perpendicular Edgecard |





flexilink board-to-board

Solid and Permanent Connection in Press-fit

Key Features

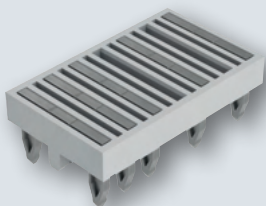
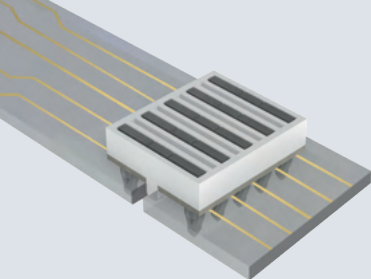
| | |
|------------------------|---|
| Types | Straight, permanent connection with 1 to 3 rows |
| Stack height | 5 - 25 mm |
| Number of contacts | 2 - 90 |
| Pitch | 2.54 mm |
| Termination technology | Press-fit |
| Approvals | UL, RoHS compliant |

Applications

Machine tools, agricultural engineering, automotive, intralogistics, crane technology, propulsion technology

Characteristics

- Reliable mechanical and electrical connection
- Space & cost saving, replaces spacer
- Single-component connection
- Individual board-to-board distances possible
- 11A operational current per pin
- Press-fit zone with Tcom press®



flexilink_{jumper}

Reliable, Small and Easy for LED and more

Key Features

| | |
|----------------------------|--|
| Types | Permanent |
| Number of contacts bridges | 2 - 15 |
| Pitch | 2 mm or 4 mm |
| Termination technology | Press-fit |
| Operational current | 11 A at 20°C (5 contact bridges) per pin |
| Approvals | UL, RoHS compliant |

Applications

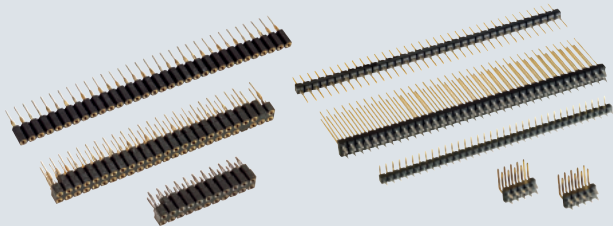
Horizontal PCB connection

LED

PCB chaining

Characteristics

- Small footprint design, height of only 2 mm
- Solid mechanical and electrical connection
- Cost saving through single-component connection
- Easy processing without soldering
- Individual pin configuration possible



VarPol

High-quality Pin Headers and Socket Strips

Key Features

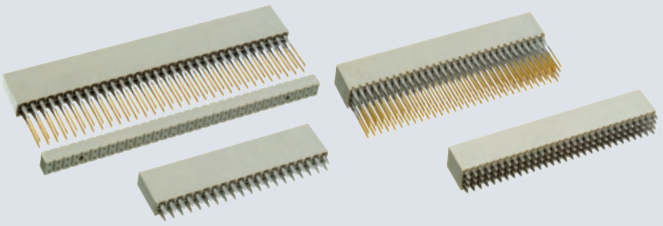
| | |
|------------------------|------------------------------------|
| Types pin header | Straight & angled, 1 and 2 rows |
| Types socket connector | Straight, 1 and 2 rows |
| Number of contacts | 2 - 108 |
| Pitch | 2.54 mm and 2 mm |
| Termination technology | Press-fit and solder |
| Termination lengths | 3.4 mm - 25 mm |
| Approvals | UL, RoHS compliant |

Applications

Board-to-board from 11.45 mm to 35.45 mm distance
No soldering required

Characteristics

- Wide range of termination lengths available
- Different performance levels:
50 and 200 mating cycles
- Gapless arrangement in a continuous row
- Easy and cost saving processing
- Press-fit zone with Tcom press®



PC/104, PC/104-Plus

Highest Quality for Established Form Factor

Key Features

| | |
|------------------------|---|
| Types | Female connector straight, 2 and 4 rows |
| Number of contacts | 40, 60, 64, 120 |
| Pitch | 2.54 mm and 2 mm |
| Termination technology | Press-fit and solder |
| Approvals | UL, RoHS compliant |

Applications

PC/104 and PC/104 Plus

Board-to-board distances 15.24 and 22 mm



PC/104

Embedded PC Modules

Characteristics

- Combination with VarPol pin headers for board-to-board applications from 11.45 mm thru 35.45 mm
- Different performance levels: 50 and 200 mating cycles
- Individual contact number possible
- Shrouds as accessory available



Advanced TCA[®]

HighSpeed Signal and Power Connectors

Key Features

| | |
|------------------------|--|
| Types Power | Angled Male and straight Female connector, 8 power and 22 / 26 signal contacts, 16 A operational current |
| Types Signal | AMC B+ edge card connector 170 contacts, pitch 0.75 mm, 12.5 Gbit/s |
| Termination technology | Press-fit |
| Approvals | UL, RoHS compliant |

Applications

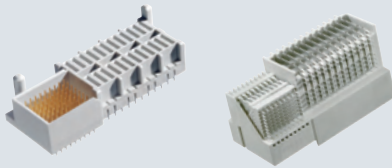
AdvancedTCA, power supplies

Mezzanine high-speed



Characteristics

- Meets the requirements of PICMG
- con:card+ quality seal
- Stamped press-fit zone with Tcom press[®]
- Cost optimized design



Micro TCA[®]

Power Connectors

Key Features

| | |
|------------------------|---|
| Types Power | Angled power module & straight backplane connector, 24 power and 72 signal contacts, 12 A operational current |
| Termination technology | Press-fit |
| Approvals | UL, RoHS compliant |

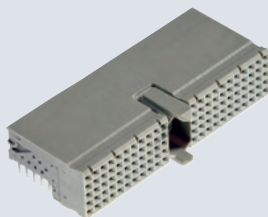
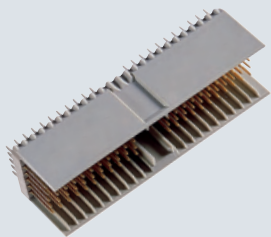
Applications

MicroTCA, power supplies

μTCA[®]

Characteristics

- Meets the requirements of PICMG



hm2.0

Hardmetric 2 mm for Backplane Systems

Key Features

| | |
|------------------------|--|
| Types | Male connector straight, Female connector angled, each with 5 and 8 rows |
| Types acc to standard | A, B25, B22, B19, AB25, AB22, AB19, C, D, E, DE, F, L, M, N |
| Number of contacts | 55 - 250 |
| Pitch | 2 mm |
| Termination technology | Press-fit |
| Data transfer rate | Up to 3 Gbit/s |
| Approvals | UL, RoHS compliant |

Applications

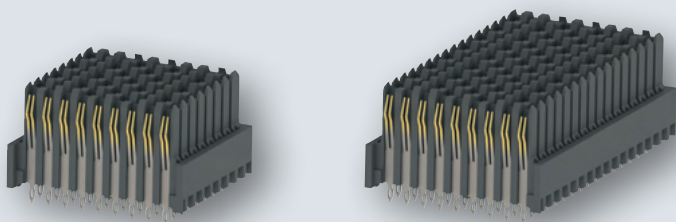
CompactPCI (19-inch technology)

Backplane - daughtercard

CompactPCI[®]

Characteristics

- Broad variety
- Available with or without shielding
- Accessories: Shrouds, coloured Coding Keys
- Special contact arrangements possible, even for low quantities
- Tested acc to IEC 61076-4-101



Velox[®]

High-Speed Backplane Connectors for VPX

Key Features

| | |
|------------------------|-----------------------------------|
| Types | Female connector straight |
| Types acc to standard | 8-left, center, 16-right, 16-left |
| Number of contacts | 72 and 144 |
| Pitch | 1.8 mm |
| Termination technology | Press-fit |
| Data transfer rate | 10 Gbps |
| Approvals | UL, RoHS compliant |

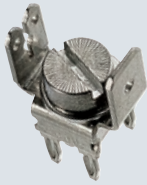
Applications

VPX (VITA46)
Backplane high-speed



Characteristics

- Tested acc. to VITA 46, and for intermatability with other manufacturers
- Special contact arrangements possible, even for low quantities
- Reliable dual beam contacts
- Accessories: Guidings



Power Supplies

Power Terminals in Press-fit

Key Features

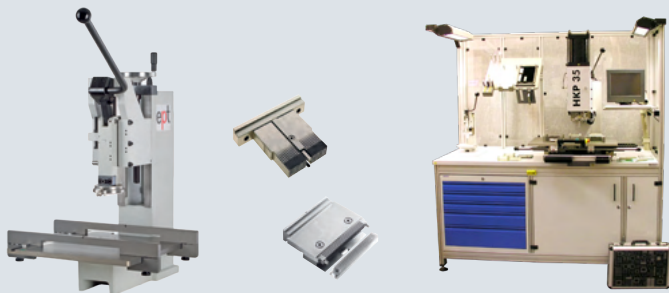
| | |
|------------------------|---|
| Types power terminals | With screw or faston connection, 2 rows |
| Pitch | 5.08 mm |
| Termination technology | Press-fit |
| Operational current | 15 A to 45 A at 20°C |
| Approvals | RoHS compliant |

Applications

Power supply through screw connection or faston contact

Characteristics

- Easy connection of power supply lines
- Individual variation possible, such as angled or cranked terminations
- Easy processing through press-fit
- Accessories: Screws with thread M4 or M5



Assembly Machines & Tools

Precise and Individual Processing for Press-fit

Press-fit Machines

- Machine types: HKP16, HKP20, HKP35
- Press-in force from 16 kN to 35 kN
- With or without insertion force monitoring
- Individual configuration possible:
pneumatic power disconnection, free moving XY-table,
PC control unit, work table adjustable in height

Press-fit tools

- Upper tools for press-in
- Support tools for stabilizing the PCB
- Tool change boards for efficient workflow

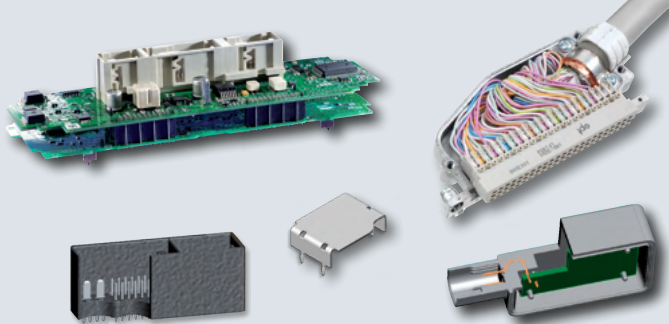
Applications

Press-fit process in mass production

Samples and trial runs, repair

Characteristics

- Press-fit connectors, machines and tools from one source
- Experienced support from the very beginning through mass production
- Individual solutions: ergonomic, efficient
- Fully automated machines for high volume applications
- In-house production of machines and tools



Customer Specific Connectors

Individually Designed and Produced from One Source

Products

- Male & female connectors in press-fit, solder, THR and SMT technology
- Stamped blade & spring contacts, shieldings
- Overmolded and sealed (potted) connectors
- Cable connectors

We offer

- Experienced support in product development
- Production of functional prototypes
- Testing and qualification equipment
- Experienced tool design in-house
- In-house production of all manufacturing steps: stamping, reel-to-reel plating, molding, assembling

Your advantages with ept

- „One-Stop-Supplier“ with over 45 years of experience
- Own tool shop
- Fully vertical integration in manufacturing
- Exceptional flexibility
- Quick responsiveness
- Cost efficient product and process design
- Highest quality



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