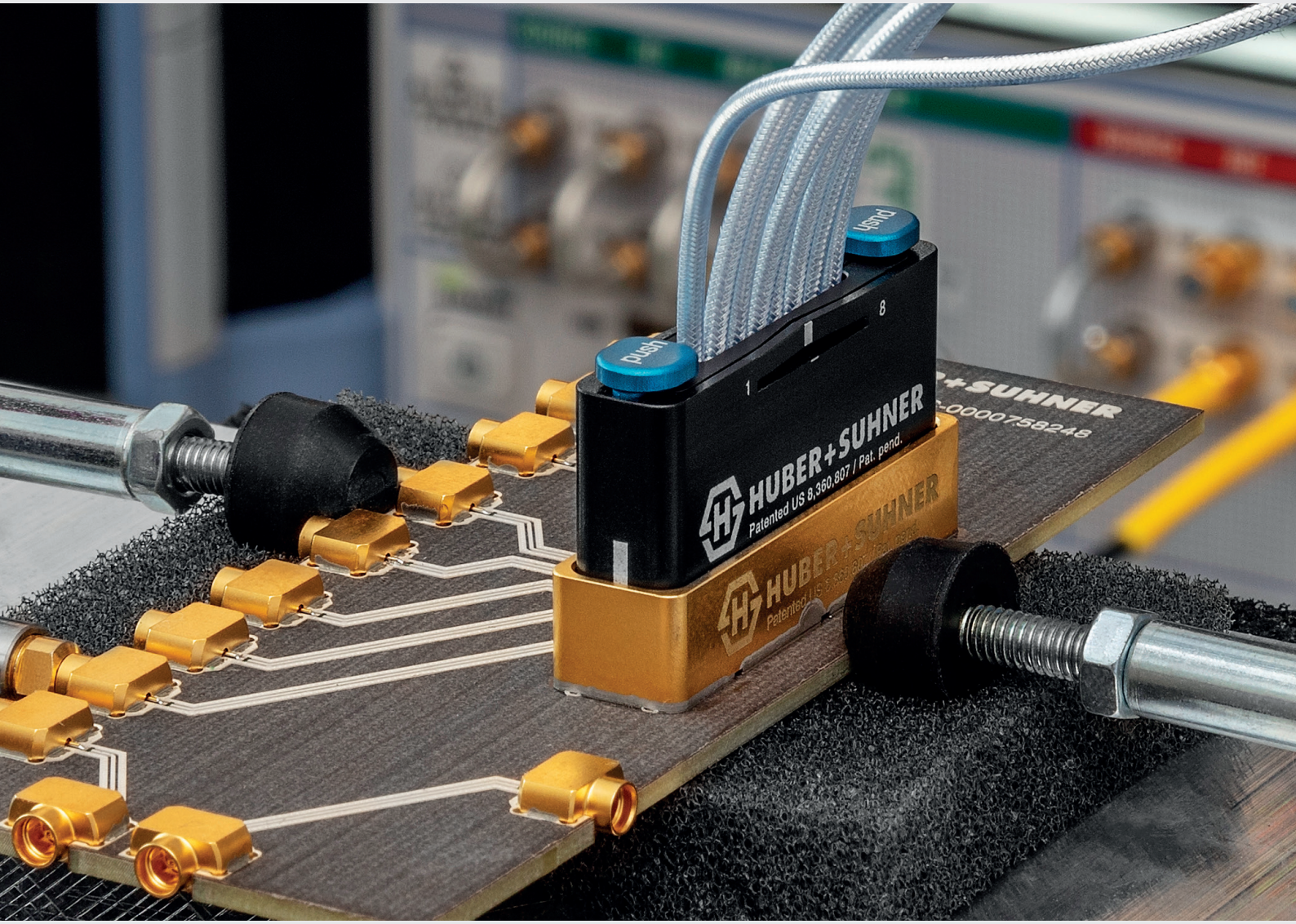
MXPM70

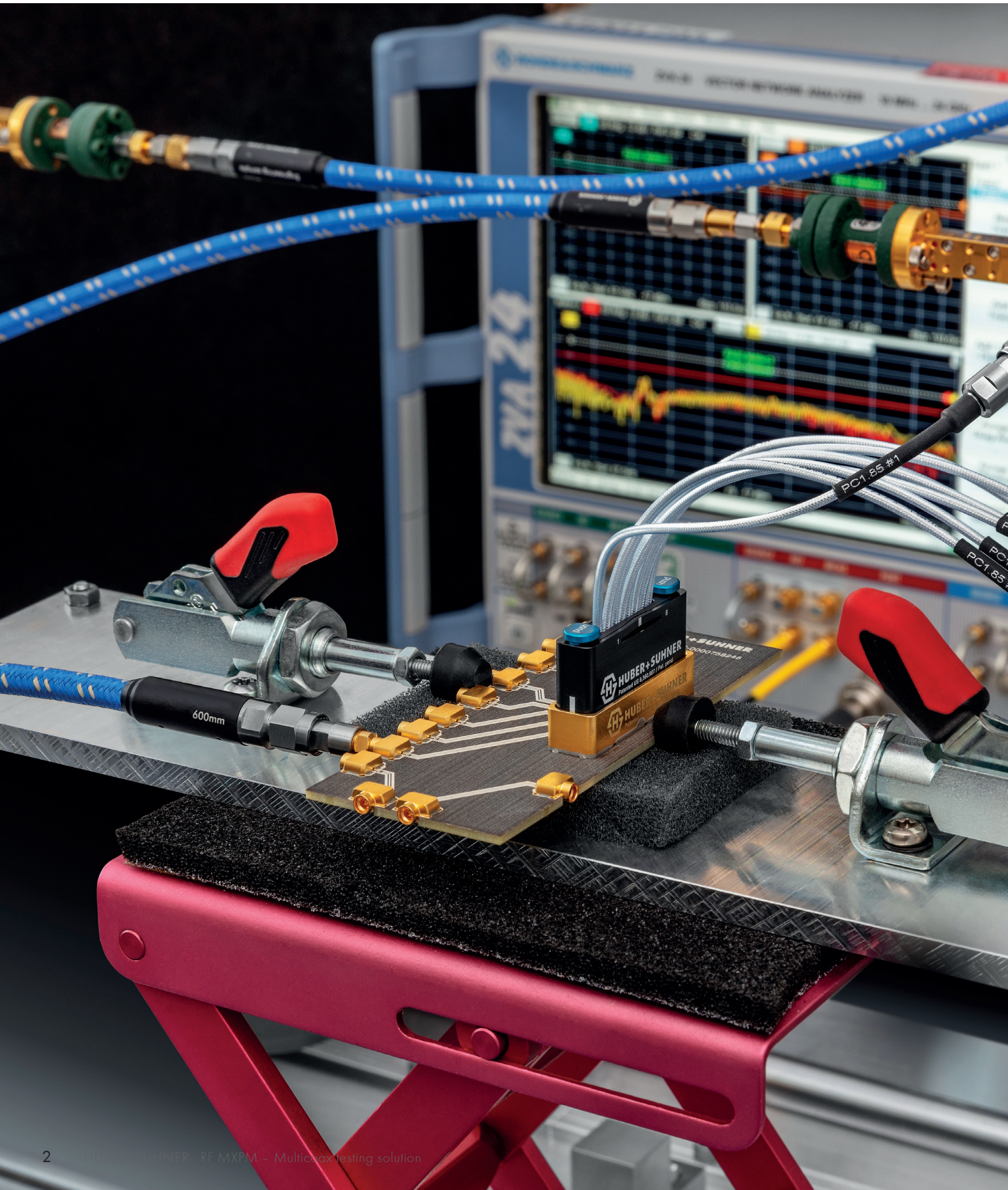
Multicoax testing solution

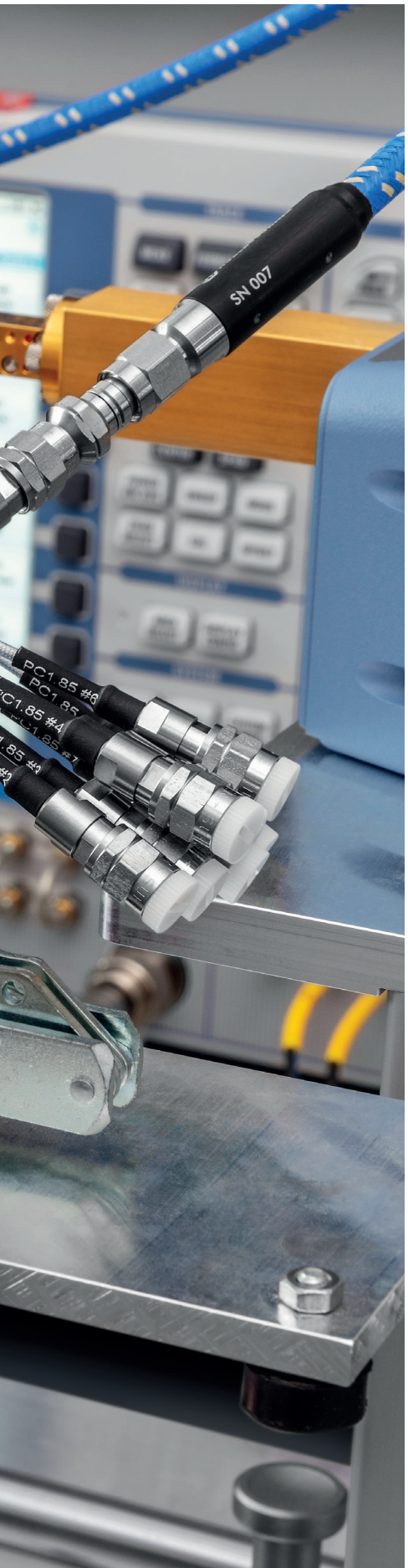
Edition 2018/07



HUBER+SUHNER
Excellence in Connectivity Solutions

Speed. Reliability. Efficiency.





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Your partner for system solutions

The HUBER+SUHNER Group is a leading global supplier of components and systems for electrical and optical connectivity. We offer technical knowledge in radio frequency technology, fiber optics and low frequency under one roof, thus providing a unique basis for continual innovation focused on the needs of our customers all over the world.

The innovative high speed digital testing solution supplier

HUBER+SUHNER is offers a broad range of high end RF test components and assemblies, developed and optimized for high speed digital testing. We stand for highest density, lowest loss and highest performance coaxial-to-PCB transitions and cabling solutions. Our solutions include extensive technical support, libraries of 3D files, electrical modelling data and customer-specific optimised footprints. With our unique, single channel MMPX solution measurements up to 80GHz are possible while our MXPM/MXP multicoax solutions allow 8 or 16 channel measurements up to 70 GHz.

HUBER+SUHNER
Excellence in Connectivity Solutions

What high speed digital testing demands

High speed digital chip verification – bench top testing

- Lowest loss from the device under test to the test equipment
- Best signal integrity performance
- Dense and space saving PCB connectivity solutions
- PCB connectivity closest to the DUT/chip
- Proven and tested solutions and components

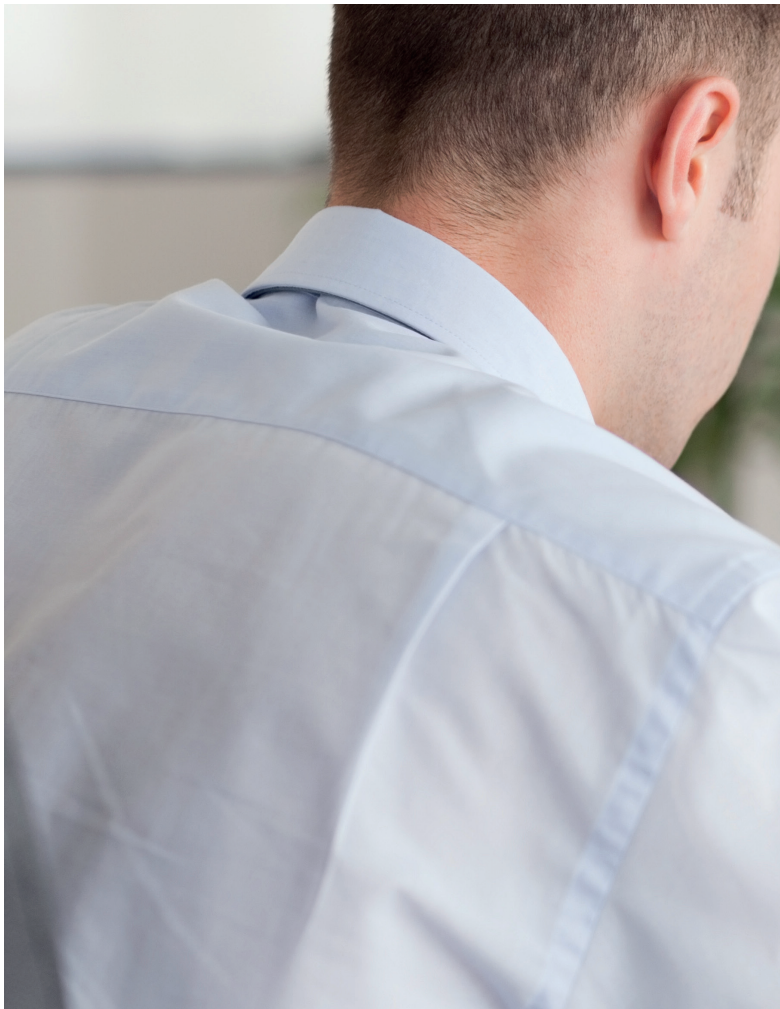
High speed digital hardware and system verification

- Multicoax edge-card and panel mount solutions
- Multicoax interconnectivity between systems and modules with customized solutions

Automated test equipment

For internal and external interconnectivity of complex automated test equipment systems HUBER+SUHNER offers customer specific solutions based on

- Multicoax interfaces at up to 70 GHz
- Single snap-on interfaces at up to 80 GHz
- RF cabling solutions optimized for highest data rates and frequencies, lowest loss, best phase matching as well as highest flexibility



Service and support

Customised and optimised PCB footprints

HUBER+SUHNER offers a professional design-in service for board connector footprints. By the use of three dimensional electromagnetic field simulation the optimal performance of the HUBER+SUHNER board connectors/sockets is provided to the customers.

Comprehensive design data

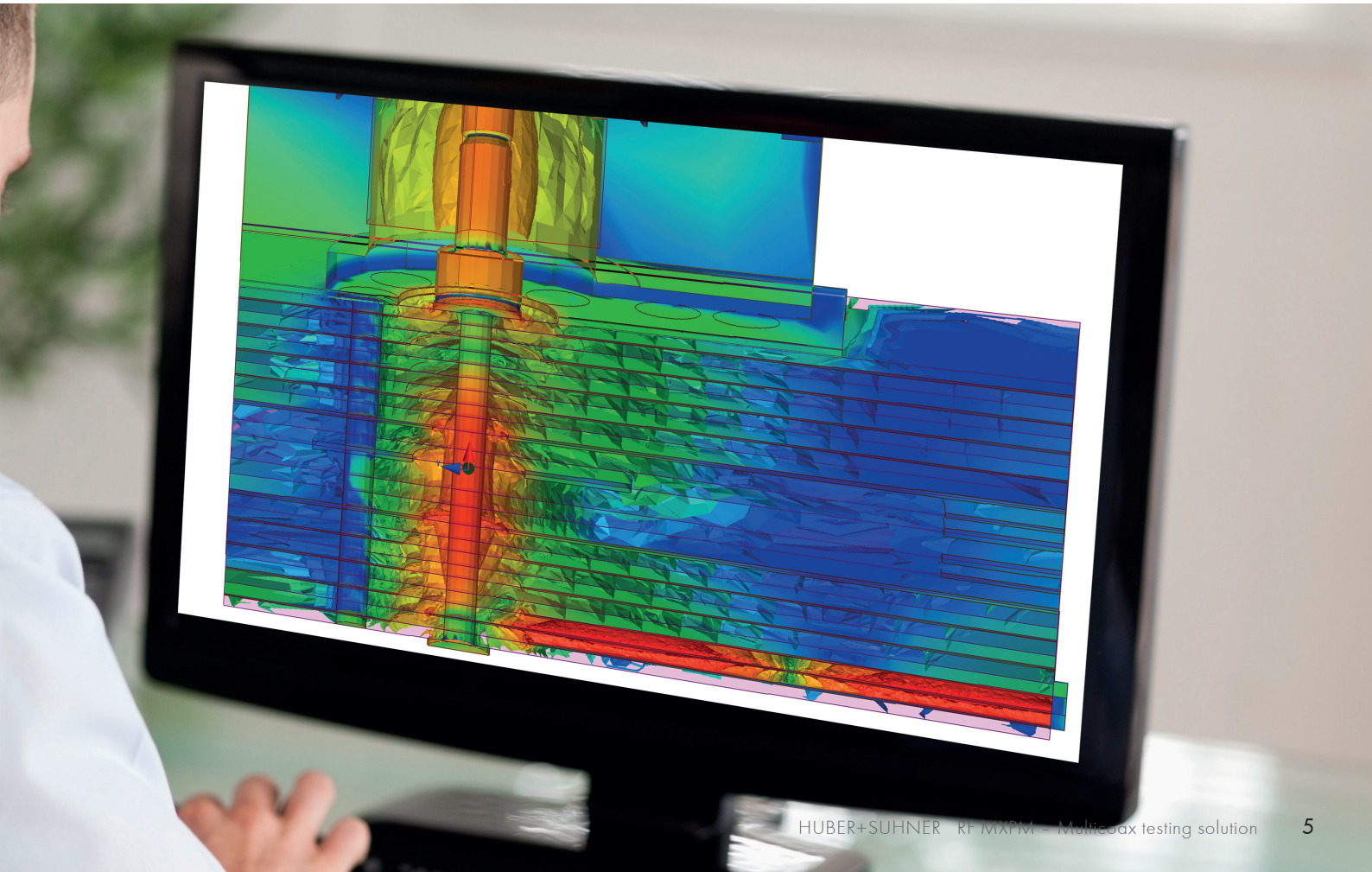
3D files
- For the exchange of CAD models between various CAD systems, HUBER+SUHNER delivers 3D files in IGS or STEP data format

S-parameter files
- Measured S-parameter files of the HUBER+SUHNER components are available on request, offering the customers he possibility to include these components into their electrical simulation

Application notes
- A bunch of application notes and technical design guidelines for the HUBER+SUHNER solutions are available on request

Non standard connectors

Although our standard connector assortment is broad and miscellaneous, there are customer requirements which need a special solution. Thanks to the capabilities and years of experience, HUBER+SUHNER is the ideal partner when customised solutions are demanded.



MXPM70 – 70 GHz multicoax solution

Key features

- Ultra-precise and highly repeatable
- Best in class signal integrity
- 2.54 mm (0.1 in.) pitch centre-to-centre
- Magnetic locking mechanism
- Automatic interface protection
- Cost-efficient PCB socket

Benefits

- **Pioneering design**
  The pioneering and advantageous design allows ultra-precise and highly repeatable S-parameter measurements of up to 70 GHz with minimal impedance variation at the PCB transition
- **Data analysis of up the 56 Gbps and beyond**
  The broadband return loss and insertion loss characteristics over the entire bandwidth guarantee best in class signal integrity for data analysis of up to 56 Gbps and beyond
- **Shortest traces on board**
  The ultra-compact design with its 2.54 mm (0.1 in.) pitch centre-to-centre makes MXPM as closely positioned as possible to the DUT/chip to keep traces short and losses low
- **Fail-safe connecting mechanism**
  The integrated magnetic locking mechanism prevents inappropriately mated counterparts and ensures that the electrical connecting reference is defined as exactly as possible at any time
- **Interface protection in disconnected condition**
  The automatic interface protection safeguards every single channel from mechanical damage when disconnected
- **Reduced expenses for PCB architecture**
  The cost-efficient PCB socket protects expensive and sensitive PCB material, eliminates imprecise and rough surfaces and greatly reduces architecture expenses, especially since there is no mandatory requirement for hard-gold plating

Range of standard products (1x8 and 2x8 ganged systems)
- 1x8 and 2x8 straight PCB sockets (semi-SMD technology)
- 1x8 and 2x8 breakout assemblies MXPM-to-PC1.85
- 1x8 and 2x8 jumper assemblies MXPM-to-MXPM
- Customised assemblies on request


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MXPM70 – Technical data

Electrical data (typical)	Testing condition	Performance
Impedance		50 Ω
Interface frequency max.		70 GHz
Return loss	Gated measurement: cable connector/ PCB transition PCB: Rogers RO3003 Cable: Multiflex 53-02	≥ 20 dB up to 50 GHz ≥ 17 dB up to 70 GHz
Insertion loss		According Multiflex 53-02
Phase match		+/- 1 ps

Mechanical data (typical)	Testing condition	Performance
Number of matings		≥ 500
Pitch centre-to-centre		2.54 mm (0.1 in.)

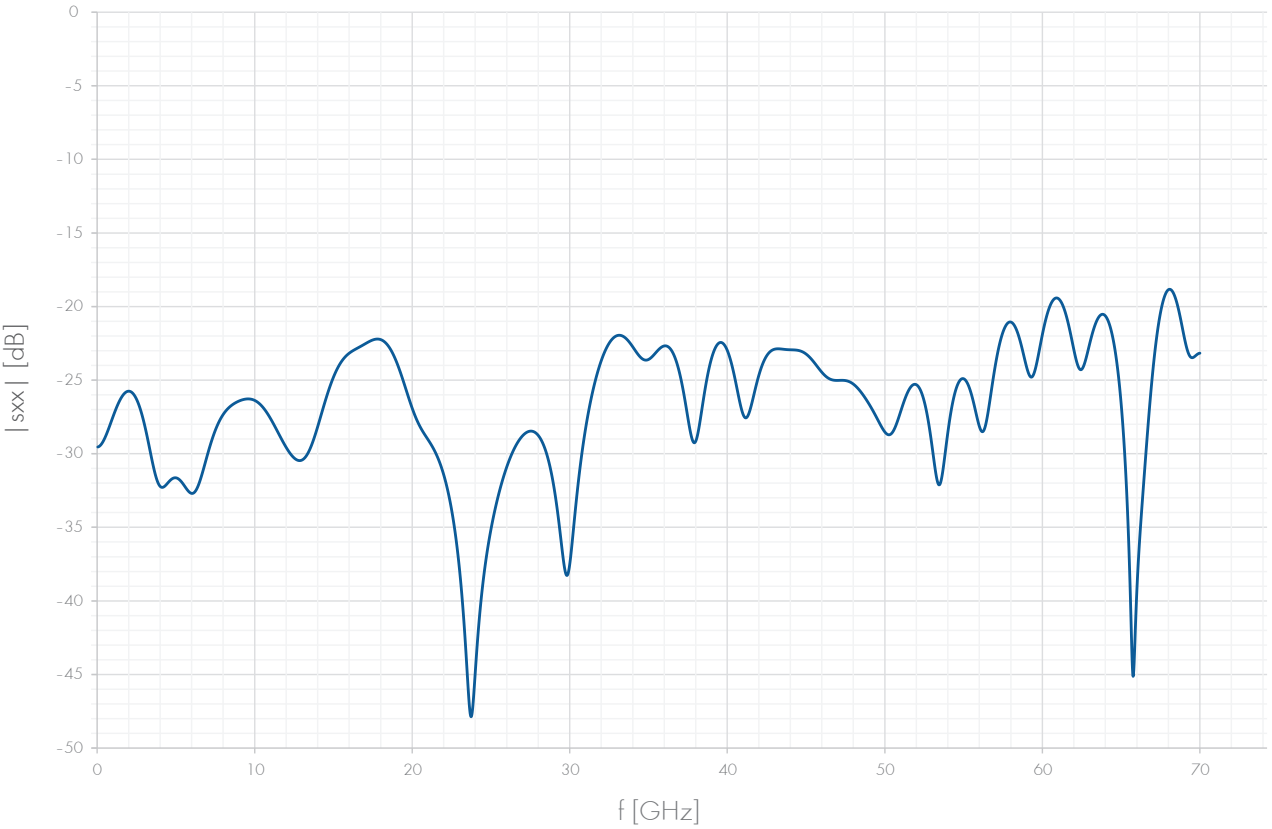
Environmental data (typical)	Testing condition	Performance
Temperature range		0°C ... +85 °C / 32 °F ... 185 °F
2011/65/EU (RoHS)		Compliant
2006/1907/EC (REACH)		Compliant

Material data cable connector	Material	Surface plating
Centre contact	Copper beryllium alloy	SUCOPRO gold plating
Outer contact	Copper beryllium alloy	SUCOPRO gold plating
Body	Alluminium	Black/blue anodised
Isolator	PEEK	N/A
Other parts	Neodym (magnets)	N/A

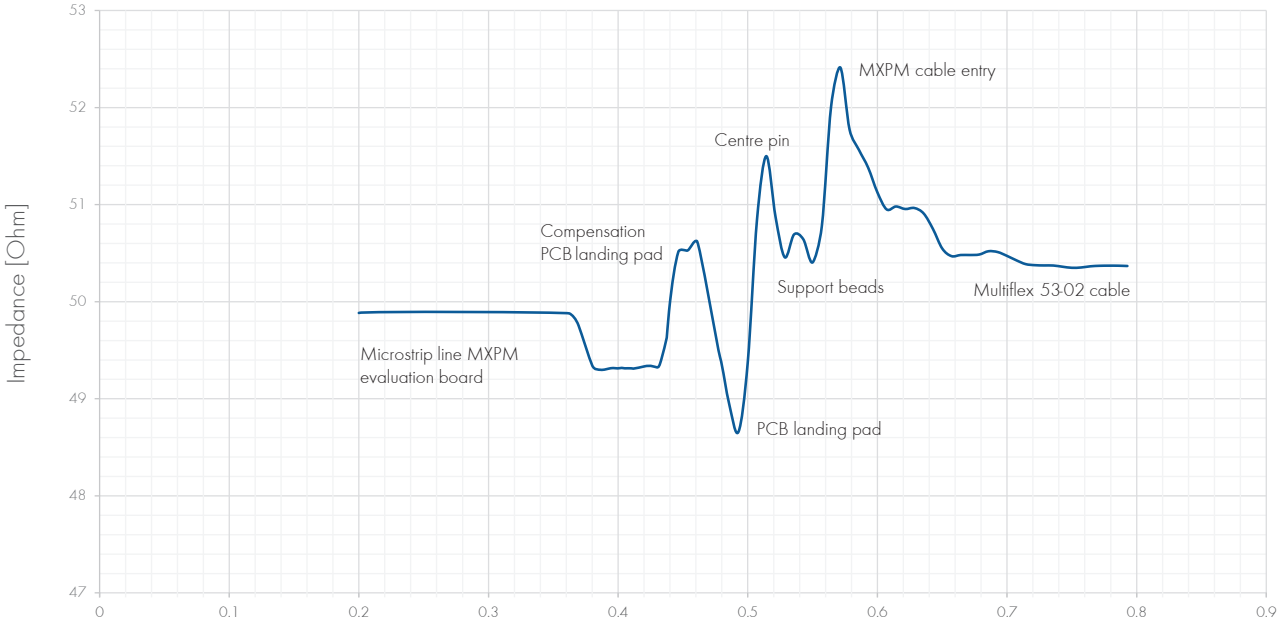
Material data PCB socket	Material	Surface plating
Body	Brass	SUCOPRO gold plating
Outer contact	Brass	SUCOPRO gold plating
Other parts	Stainless steel	N/A

MXPM70 – Technical data

Return loss, gated measurement: Cable connector/PCB transition (evaluation board V2.1, typical)

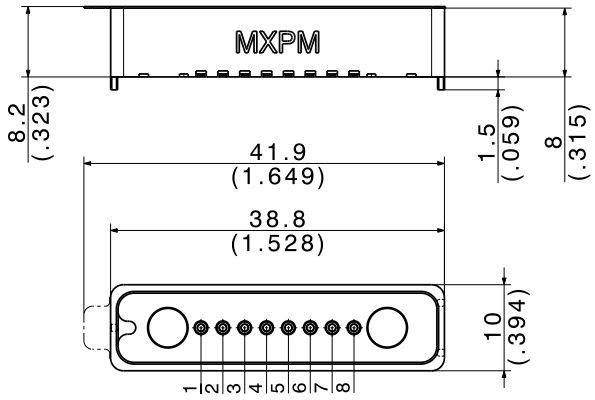


Time domain: Cable connector/PCB transition (evaluation board V2.1, typical)



MXPM70 – PCB socket

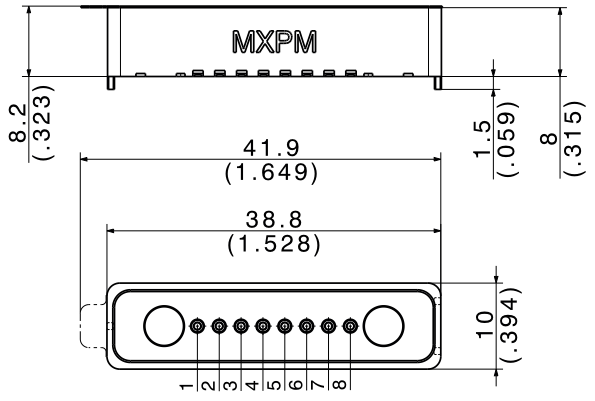
- Pitch 2.54 mm (0.1 in.)
- Via-in-pad capable
- Semi-SMD technology – guide pins for better mechanical stability of solder joint





Ordering information

Type 1x8 ganged	Item number	Packaging	Characteristics
1x8A_82_MXPM-S50-0-1/-11_NE	85091041	Single	Asymmetric design (keyed)
1x8A_82_MXPM-S50-0-1/-11_NM	85104380	Tape + Reel 100	

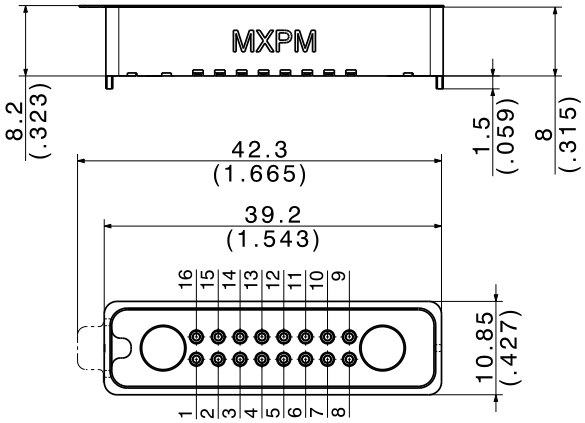




Ordering information

Type 1x8 ganged	Item number	Packaging	Characteristics
1x8A_82_MXPM-S50-0-2/-11_NE	85085226	Single	Symmetric design (unkeyed)
1x8A_82_MXPM-S50-0-2/-11_NM	85104409	Tape + Reel 100	

MXPM70 – PCB socket





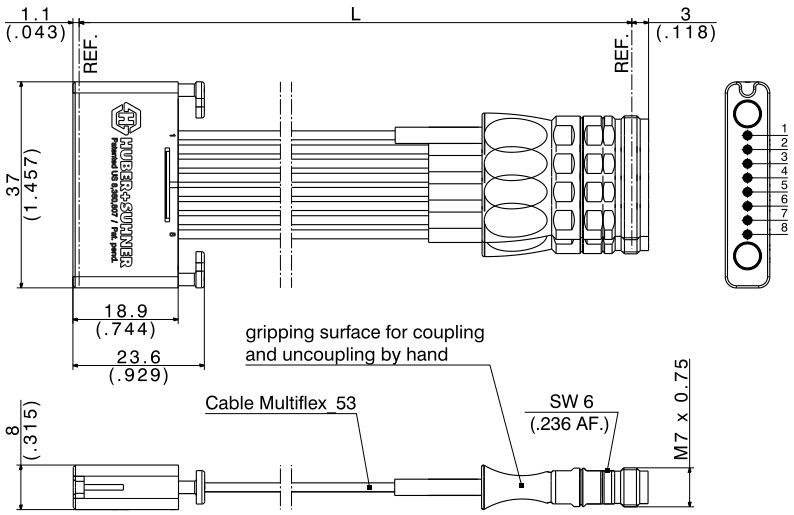
Ordering information

Type 2x8 ganged	Item number	Packaging	Characteristics
2x8A_82_MXPM-S50-0-1/-11_NE	85091060	Single	Asymmetric design (keyed)
2x8A_82_MXPM-S50-0-1/-11_NM	85104412	Tape + Reel 100	

MXPM70 – Breakout to PC 1.85

- 1x8 ganged versions
- Breakout to female PC 1.85





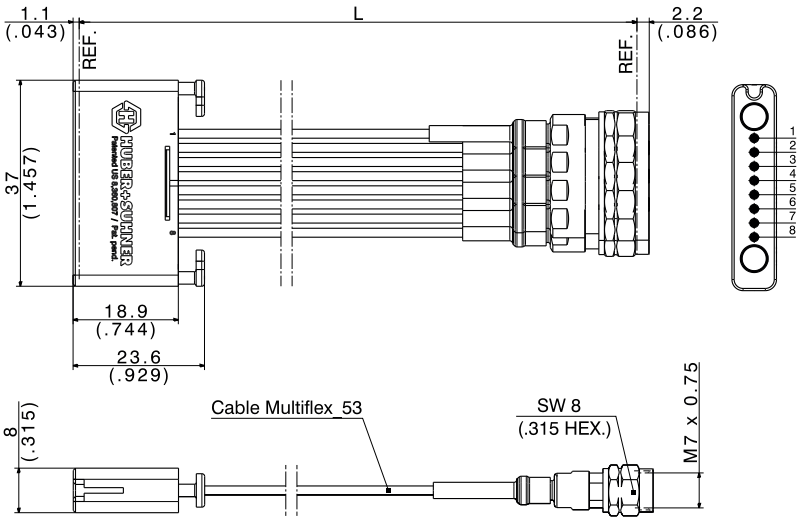
Ordering information

Type 1x8 ganged	Item number	Length	Characteristics
MF53/1x8A_11MXPM/21PC185_e/76	85101216	76 mm (3 in.)	Single channels numbered with ergo grip on PC 1.85
MF53/1x8A_11MXPM/21PC185_e/152	85098172	152 mm (6 in.)	

MXPM70 – Breakout to PC 1.85

- 1x8 ganged versions
- Breakout to male PC 1.85





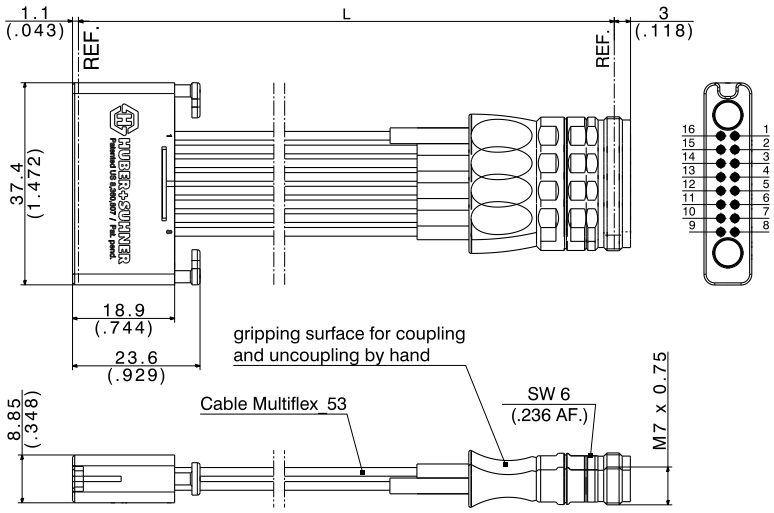
Ordering information

Type 1x8 ganged	Item number	Length	Characteristics Characteristics
MF53/1x8A_11MXPM/11PC185/76	85097884	76 mm (3 in.)	Single channels numbered
MF53/1x8A_11MXPM/11PC185/152	85085482	152 mm (6 in.)	

MXPM70 – Breakout to PC 1.85

- 2x8 ganged versions
- Breakout to female PC 1.85





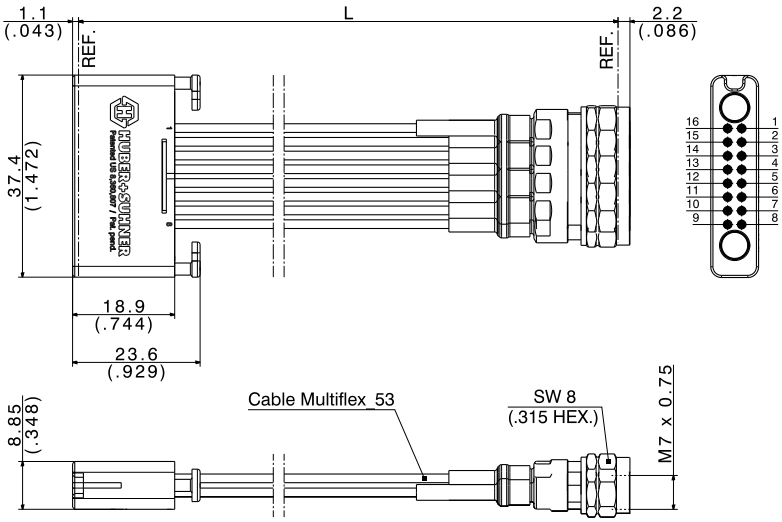
Ordering information

Type 2x8 ganged	Item number	Length	Characteristics
MF53/2x8A_11MXPM/21PC185_e/76	85099712	76 mm (3 in.)	Single channels numbered with ergo grip on PC 1.85
MF53/2x8A_11MXPM/21PC185_e/152	85096261	152 mm (6 in.)	

MXPM70 – Breakout to PC 1.85

- 2x8 ganged versions
- Breakout to male PC 1.85



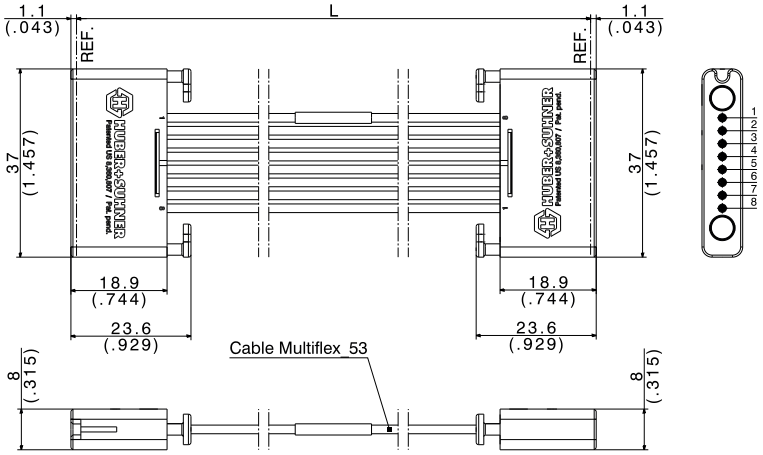


Ordering information

Type 2x8 ganged	Item number	Length	Characteristics
MF53/2x8A_11MXPM/11PC185/76	on request, 85107417	76 mm (3 in.)	Single channels numbered
MF53/2x8A_11MXPM/11PC185/152	85091160	152 mm (6 in.)	
MF53/2x8A_11MXPM/11PC185/305	85102802	305 mm (12 in.)	

MXPM70 – Jumper

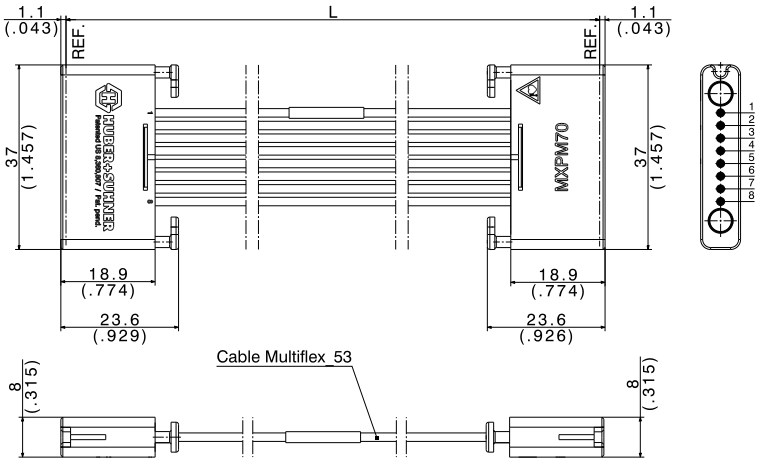
- 1x8 ganged versions
- Pin map: 1-to-8 or 1-to-1





Ordering information

Type 1x8 ganged	Item number	Length	Characteristics
MF53/1x8A_11MXPM/11MXPM/152	85101230	152 mm (6 in.)	Pin map: 1-to-8
MF53/1x8A_11MXPM/11MXPM/305	85107418	305 mm (12 in.)	



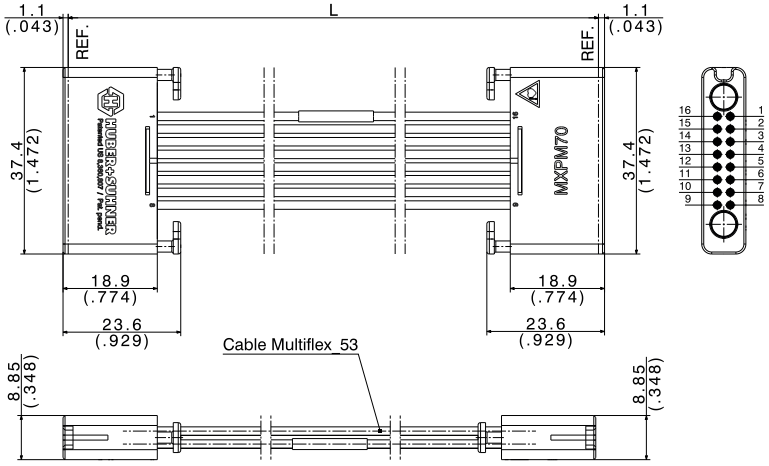


Ordering information

Type 1x8 ganged	Item number	Length	Characteristics
MF53/1x8A_11MXPM/11MXPM/152_1	on request, 85107423	152 mm (6 in.)	Pin map: 1-to-1
MF53/1x8A_11MXPM/11MXPM/305_1	on request, 85107424	305 mm (12 in.)	

MXPM70 – Jumper

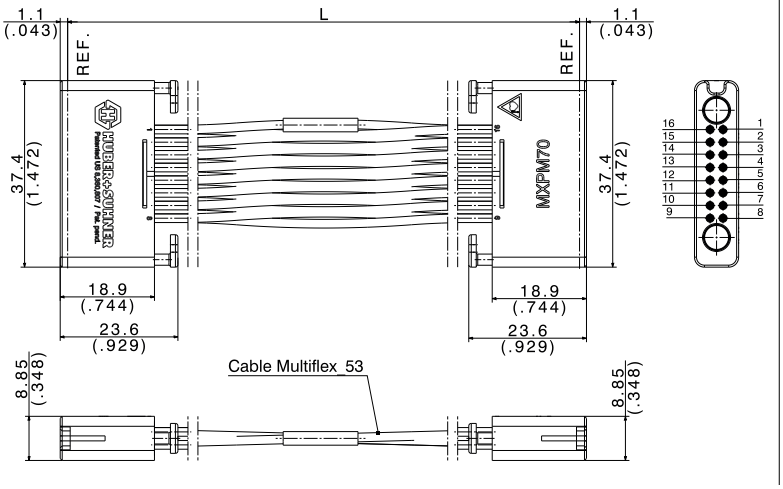
- 2x8 ganged versions
- Pin map: 1-to-16 or 1-to-1





Ordering information

Type 2x8 ganged	Item number	Length	Characteristics
MF53/2x8A_11MXPM/11MXPM/152	on request, 85107419	152 mm (6 in.)	Pin map: 1-to-16
MF53/2x8A_11MXPM/11MXPM/305	on request, 85107420	305 mm (12 in.)	

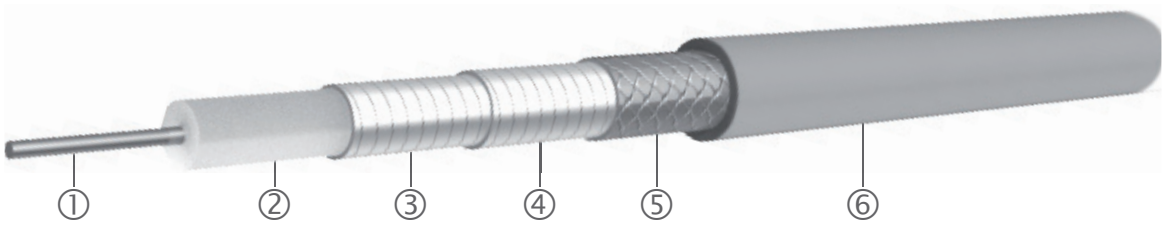




Ordering information

Type 2x8 ganged	Item number	Length	Characteristics
MF53/2x8A_11MXPM/11MXPM/152_1	on request, 85107421	152 mm (6 in.)	Pin map: 1-to-1
MF53/2x8A_11MXPM/11MXPM/305_1	on request, 85107422	305 mm (12 in.)	

MULTIFLEX 53-02 – Technical data



	Description	Diameter
1. Centre conductor	solid silver-plated copper wire	
2. Dielectric	solid PTFE	
3. 1st outer conductor	silver-plated copper tape	
4. 2nd outer conductor	silver-plated copper tape	
5. 3rd outer conductor	silver-plated copper braid	
6. Jacket	fluoroethylenepropylene, sky blue	1.74 mm

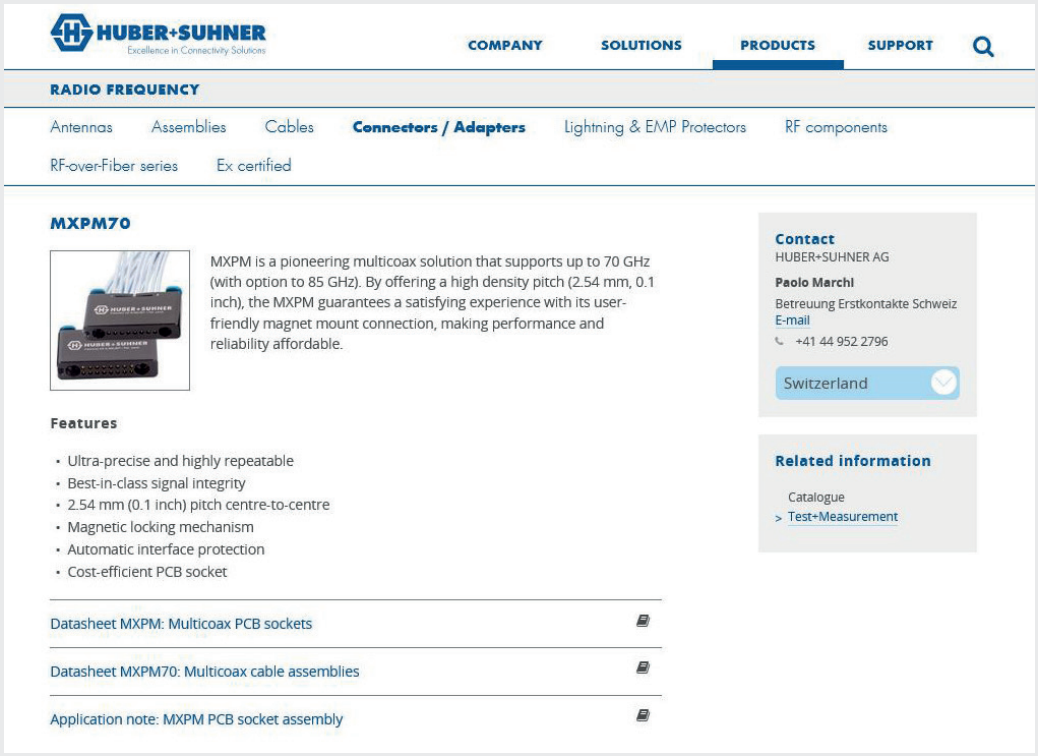
Electrical cable data					
Impedance					50 Ohm
Operating frequency					67 GHz
Capacitance					95.5 pF/m (29.1 pF/ft)
Velocity of propagation					70 %
Time delay					4.8 ns/m (1.46 ns/ft)
Nom. attenuation*	coefficient a	1.089	coefficient b	0.032	
Max. attenuation*	coefficient a	1.143	coefficient b	0.035	
Max. operating voltage					750 Vrms
Min. screening effectiveness up to 18 GHz					90 dB

*Attenuation calculation $\alpha_{25} = a \cdot \sqrt{f}\ (GHz) + b \cdot f\ (GHz)\ (dB/m)$

General cable data	
Temperature range	–65 to + 165 °C
Weight	0.85 kg/100 m
Min. bending radius dynamic	10 mm

Find out more about MXPM

Visit:
https://www.hubersuhner.com/en/products/radio-frequency/connectors-adapters



Online catalogues



RF Coaxial connectors
General catalogue



Test+Measurement
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