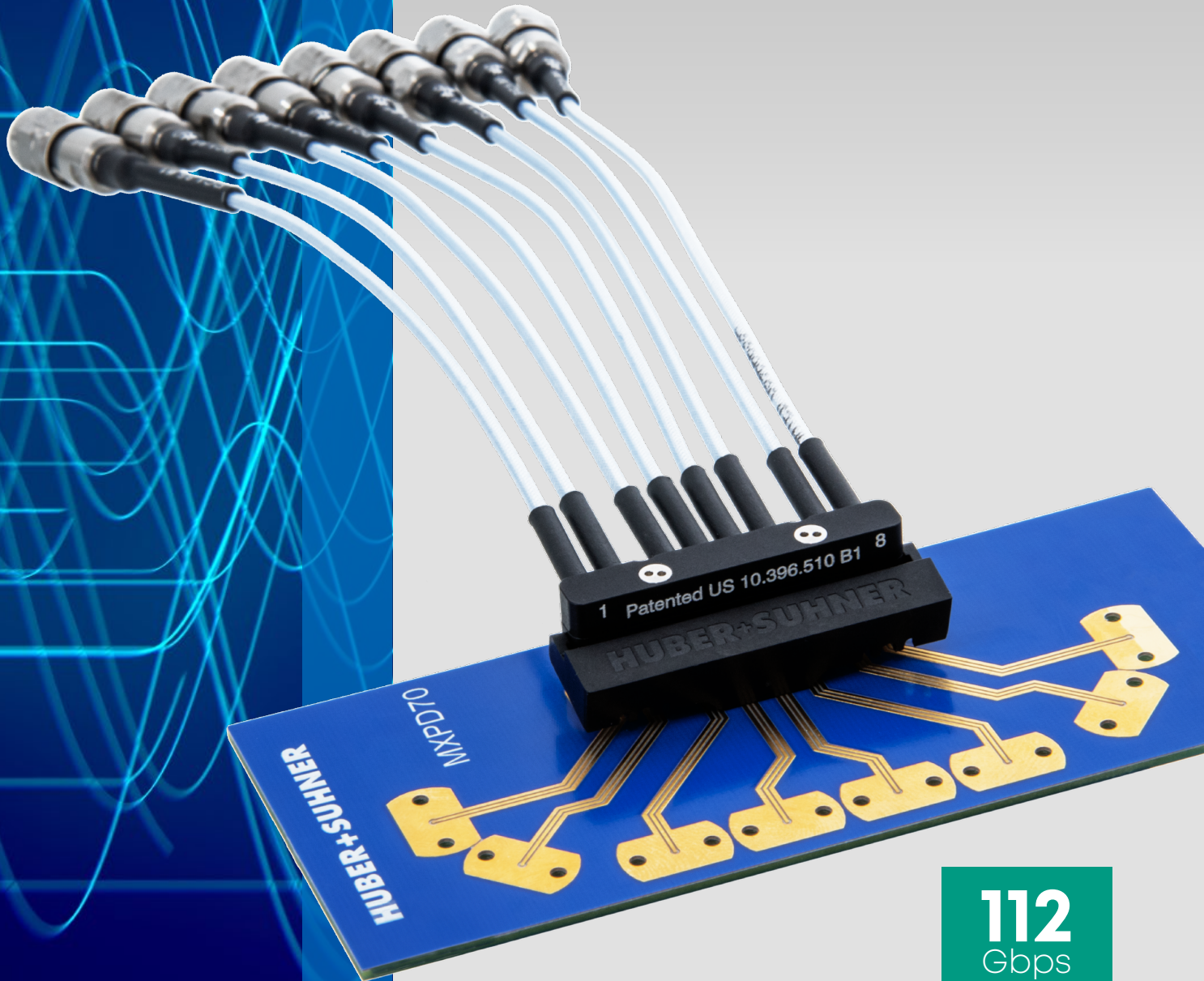


MXPD70

Compression mount multicoax testing solution

Edition 2024



112
Gbps
PAM4
ready

MXPD70

Elevate your test setup to the next level

Unlock the potential of our innovative solderless multicoax solution. Engineered for superior signal integrity in tight space conditions, MXPD70 offers a bandwidth of up to 70 GHz, setting the standard for high-performance test setups where soldered components are impractical.

Featuring swivel-mounted interface protection, our solution ensures maximum mechanical reliability. With precise reproducibility of values, you can trust in the accuracy of your results every time.



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Innovation partner for high-speed testing solutions

HUBER+SUHNER offers a broad range of high-end RF test components and assemblies, developed and optimized for high-speed digital testing. Our connectivity portfolio can be distinguished by highest density, lowest loss and optimal performance coaxial-to-PCB transitions and cabling solutions. Additionally, we provide technical support, along with libraries of 3D files, electrical modelling data and customized footprints tailored to meet individual requirements.

Applications

- High-speed digital evaluation and reference boards
- Test and characterisation boards
- System testing

Portfolio overview

Straight breakout assemblies

Breakouts to 1.85 mm female or male interface
Standard cable lengths 152 and 305 mm/6 and 12 inch



Right angle breakout assemblies

Breakouts to 1.85 mm female or male interface
Standard cable lengths 152 and 305 mm/6 and 12 inch



Jumper assemblies

Straight or right angle versions
Standard cable length 305 mm/12 inch





Features and benefits

- **Solderless compression mount interface**
No PCB solder-down components required
- **Superior signal integrity up to 70 GHz**
Ready for 112 Gbps data analysis
- **3.4 mm / 0.134 inch pitch signal-to-signal**
Dense footprint gets assemblies closer to the DUT
- **1×8 straight and 1×8 right angle version
(super-low profile of 11.9 mm / 0.469 inch)**
Tailored for mounting beneath heaters with restricted clearance
- **Identical layouts for straight and right angle versions**
Reduced simulation efforts and more convenient assembly replacements when necessary
- **No hard gold plating required on PCB**
Advantageous design of spring-loaded center pin/
ground contacts
- **Swivel-mounted interface protection**
Integrated interface protection for assembly not in use

General 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: HUBER+SUHNER evaluation board Cable: Multiflex 53-02	Straight MXP70: DC – 50 GHz, ≥ 20 dB / 50 – 70 GHz, ≥ 15 dB Right angle MXP70: DC – 40 GHz, ≥ 20 dB / 40 – 70 GHz, ≥ 12 dB
Insertion loss		Multiflex 53-02
Phase match per multicoax		+/- 1 ps

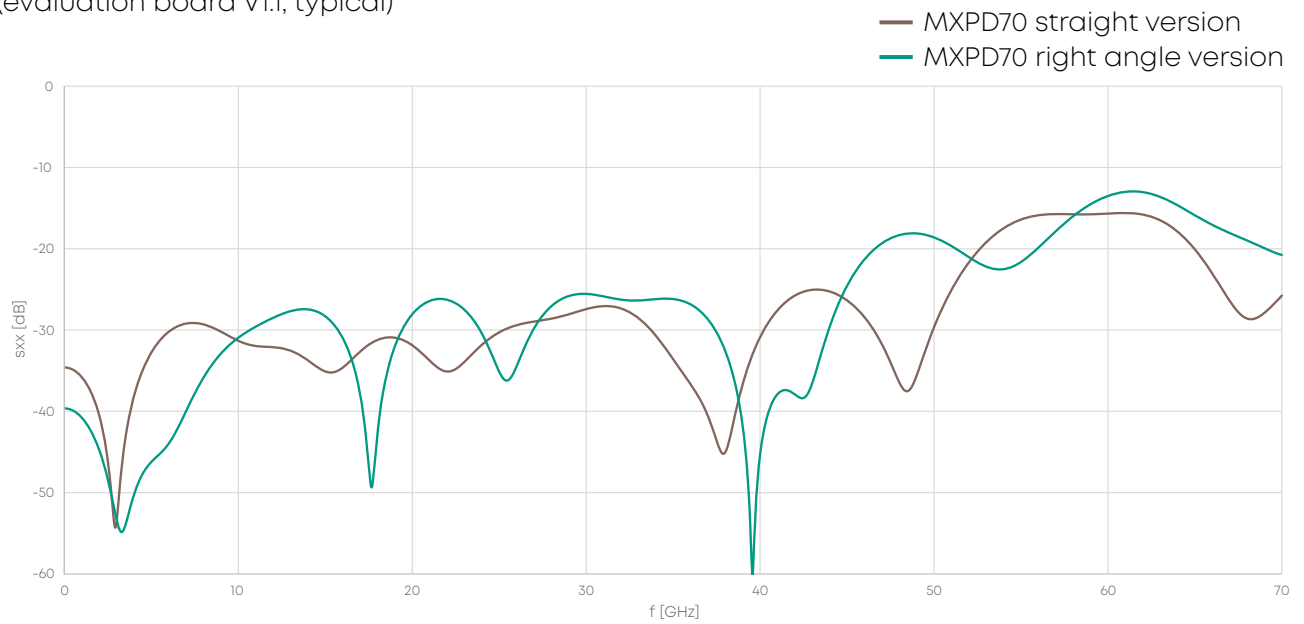
Mechanical data (typical)	Testing condition	Performance
Durability/matings		≥ 500
Pitch center-to-center		3.4 mm / 0.134 inch

Environmental data (typical)	Testing condition	Performance
Temperature range		0 °C ... 125 °C / 32 °F ... 257 °F
2011/65/EC (RoHS)		Compliant
2006/1907/EC (REACH)		Compliant

Material data cable connector	Material	Surface plating
Centre contact	Copper beryllium alloy	SUCOPRO gold plating
Outer contact	Stainless steel	N/A
Body 1	Brass	Gold plating
Body 2	Aluminum	Black anodization
Insulator/dielectric	PEEK	N/A
Other parts	Stainless steel (screws)	N/A

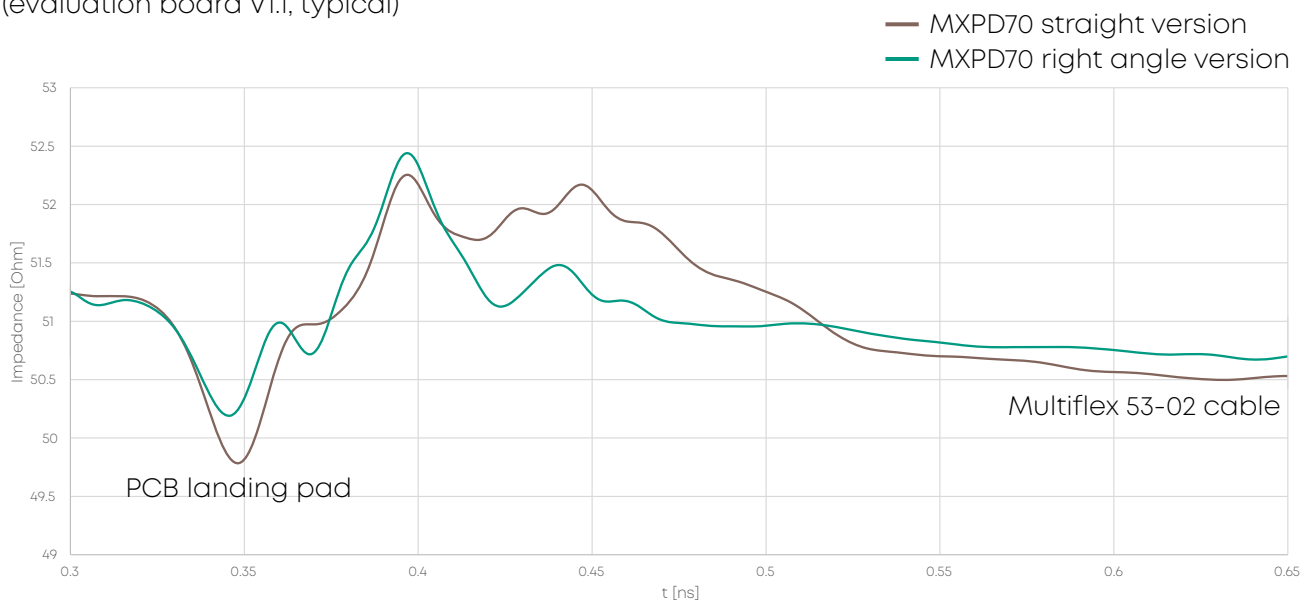
Return loss, gated measurement: Cable connector/PCB transition

(evaluation board V1.1, typical)



Time domain: Cable connector/PCB transition

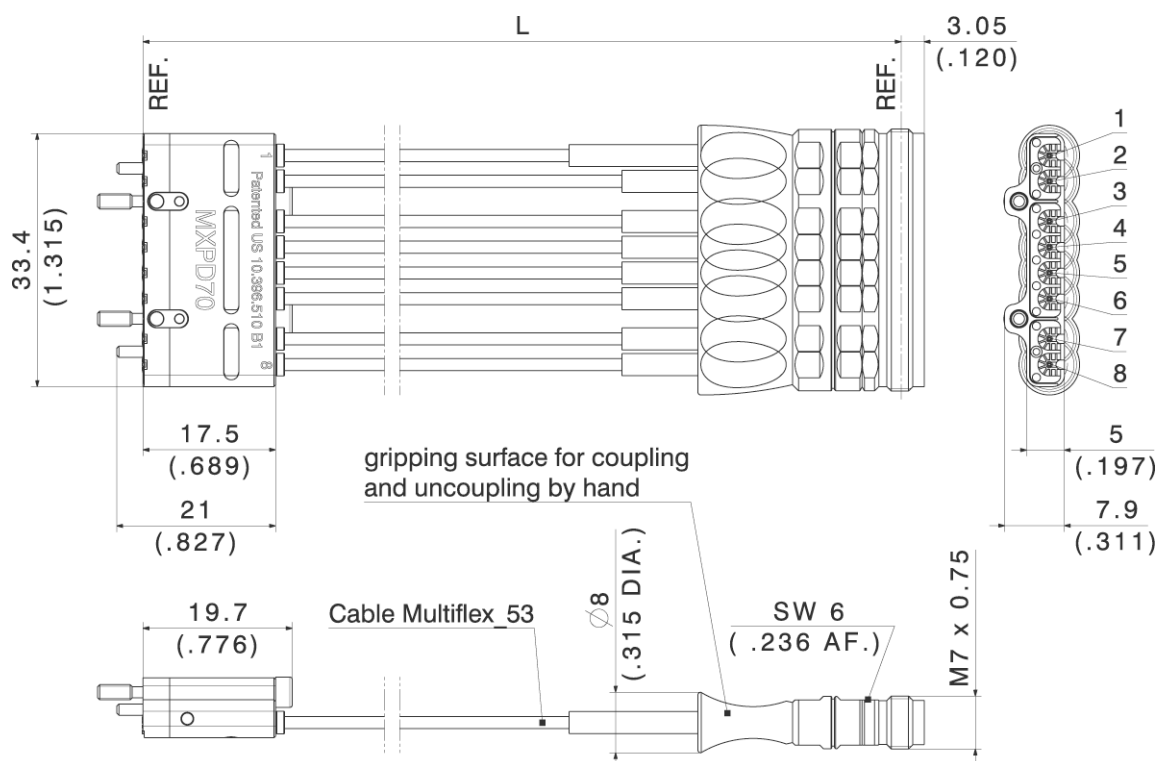
(evaluation board V1.1, typical)



MXPD70

Straight breakout to PC 1.85

- 1x8 ganged version
- Breakout to female PC 1.85



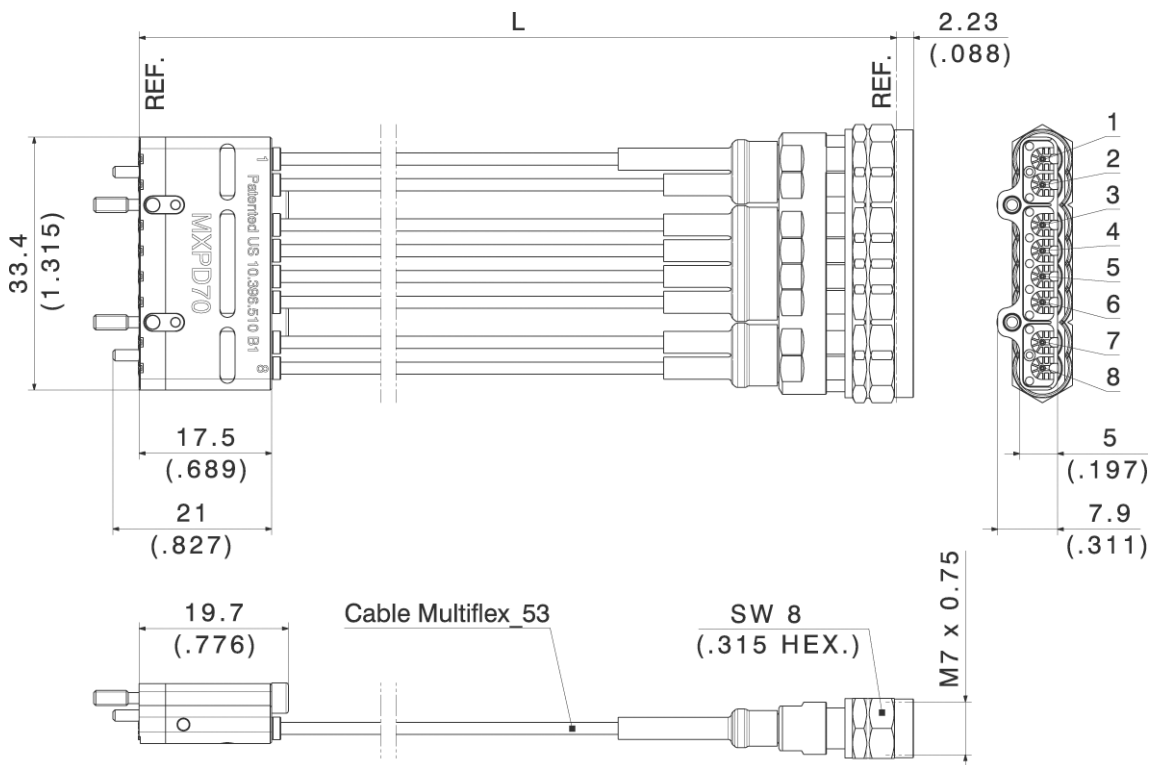
Ordering information

Type 1x8 ganged	Item number	Length	Note
MF53/1x8A_11MXPD/21PC185/152	85221832	152 mm / 6 inch	Single channels numbered
MF53/1x8A_11MXPD/21PC185/305	85235077	305 mm / 12 inch	

MXPD70

Straight breakout to PC 1.85

- 1x8 ganged version
- Breakout to male PC 1.85

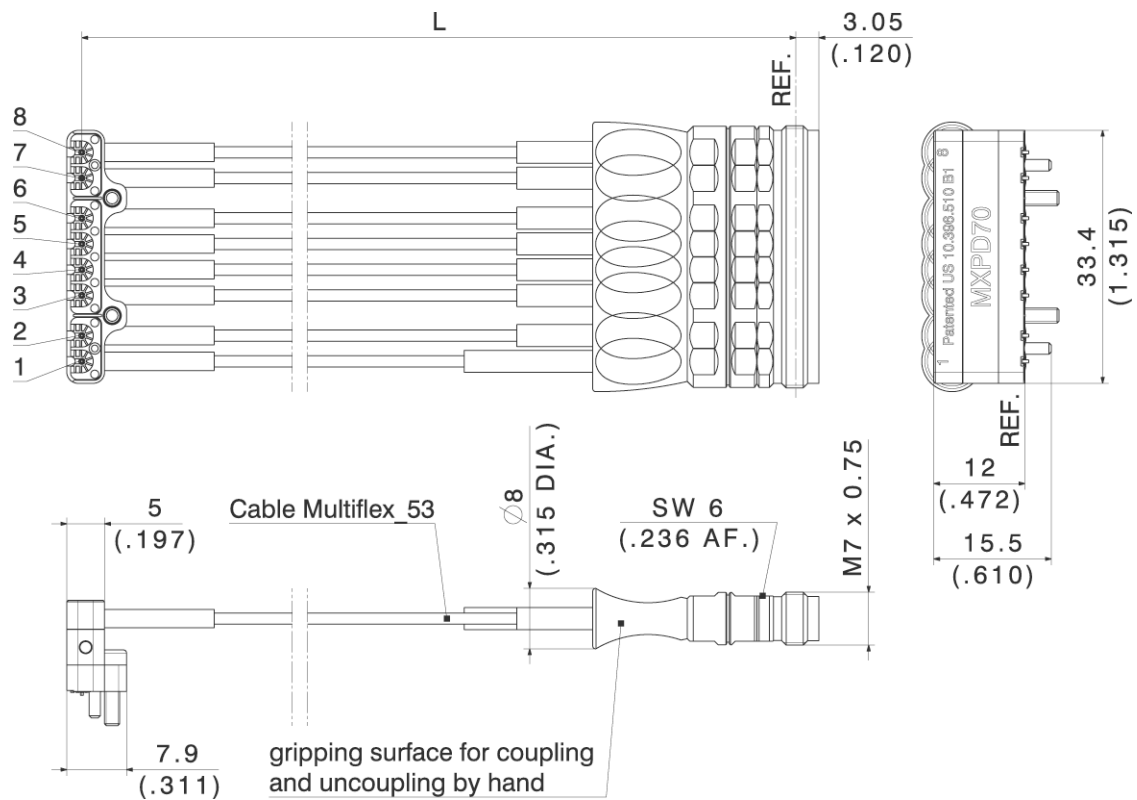


Ordering information

Type 1x8 ganged	Item number	Length	Note
MF53/1x8A_11MXPD/11PC185/152	85191606	152 mm / 6 inch	Single channels numbered
MF53/1x8A_11MXPD/11PC185/305	85235076	305 mm / 12 inch	

Right angle breakout to PC 1.85

-

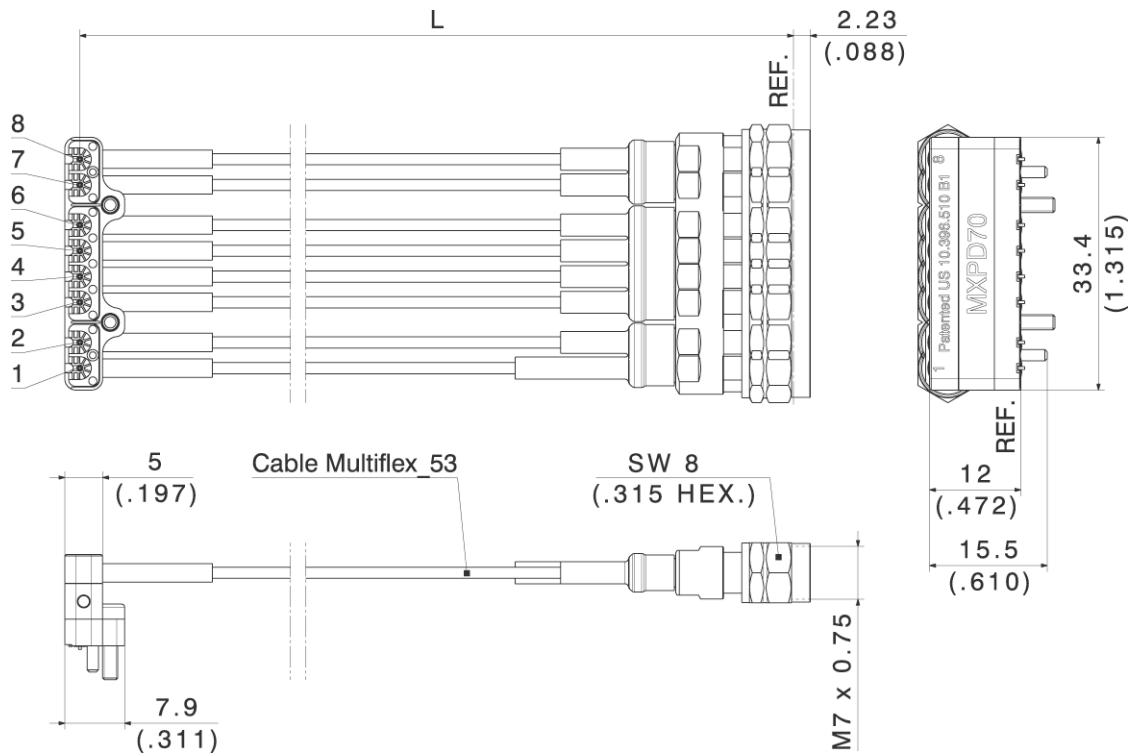


Type 1x8 ganged	Item number	Length	Note
MF53/1x8A_16MXPD/21PC185/152	85222077	152 mm / 6 inch	Single channels numbered
MF53/1x8A_16MXPD/21PC185/305	85235095	305 mm / 12 inch	

MXPD70

Right angle breakout to PC 1.85

- 1x8 ganged version
- Breakout to male PC 1.85



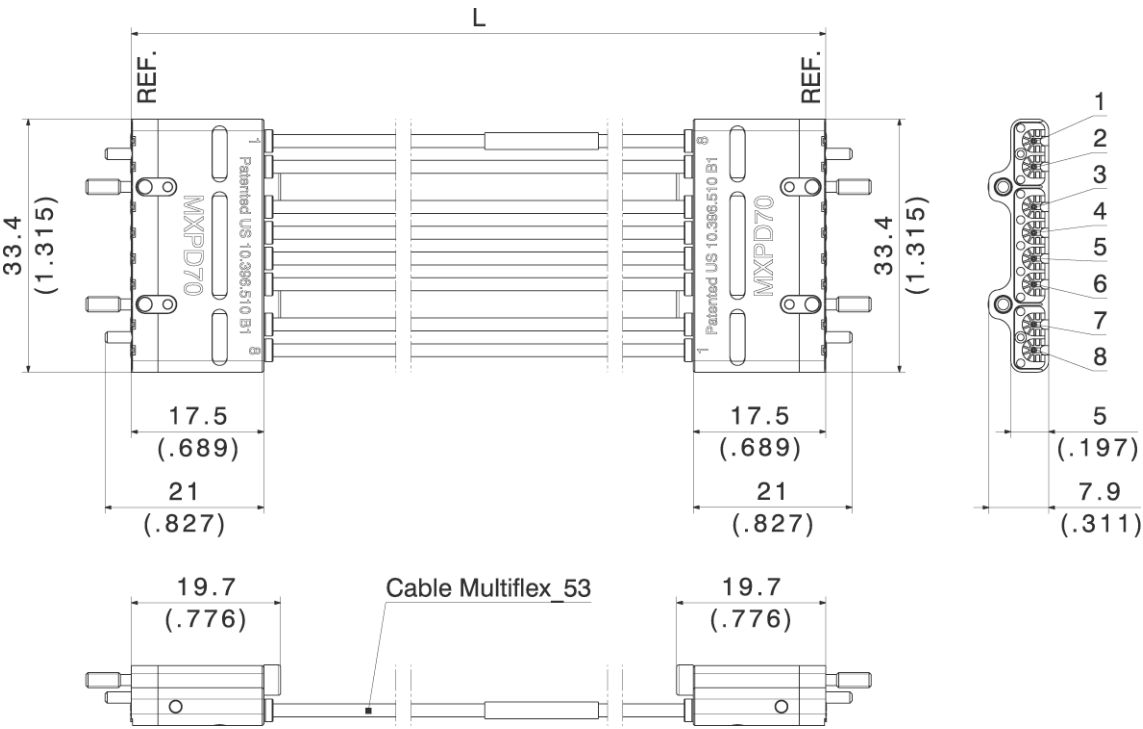
Ordering information

Type 1x8 ganged	Item number	Length	Note
MF53/1x8A_16MXPD/11PC185/152	85190397	152 mm / 6 inch	Single channels numbered
MF53/1x8A_16MXPD/11PC185/305	85235081	305 mm / 12 inch	

MXPD70

Straight jumper

- 1x8 ganged version



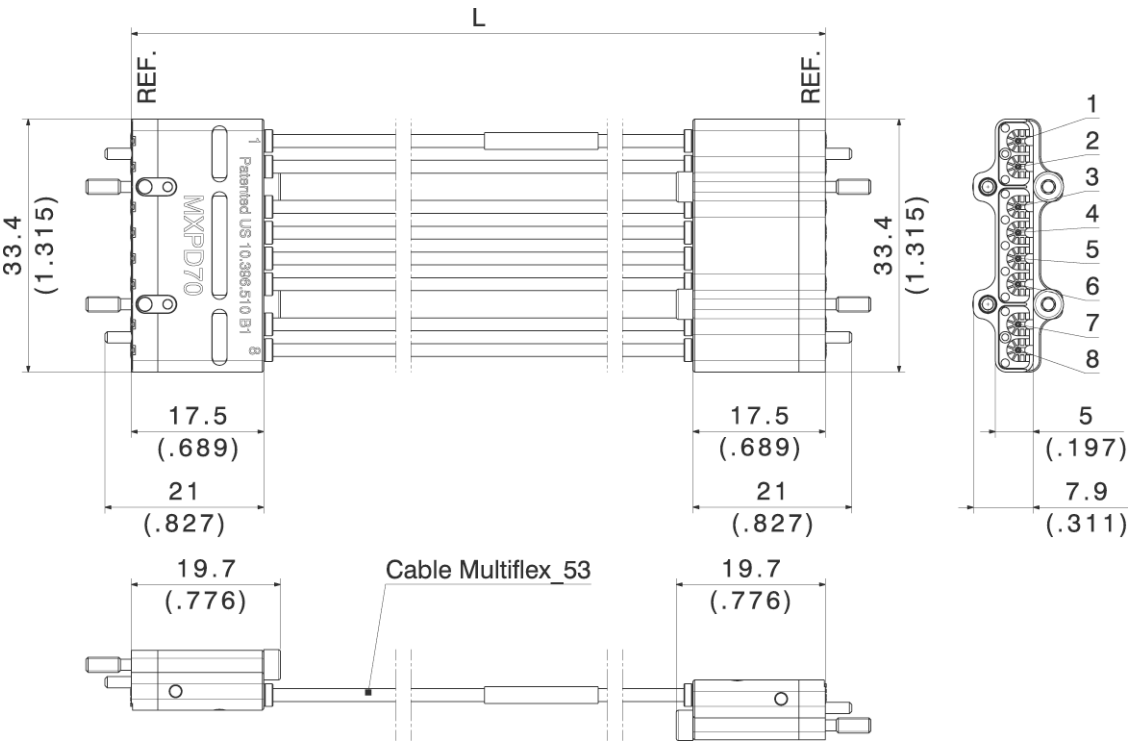
Ordering information

Type 1x8 ganged	Item number	Length	Note
MF53/1x8A_11MXPD/11MXPD/305	85236602	305 mm/12 inch	Pin map 1-to-8

MXPD70

Straight jumper

- 1×8 ganged version



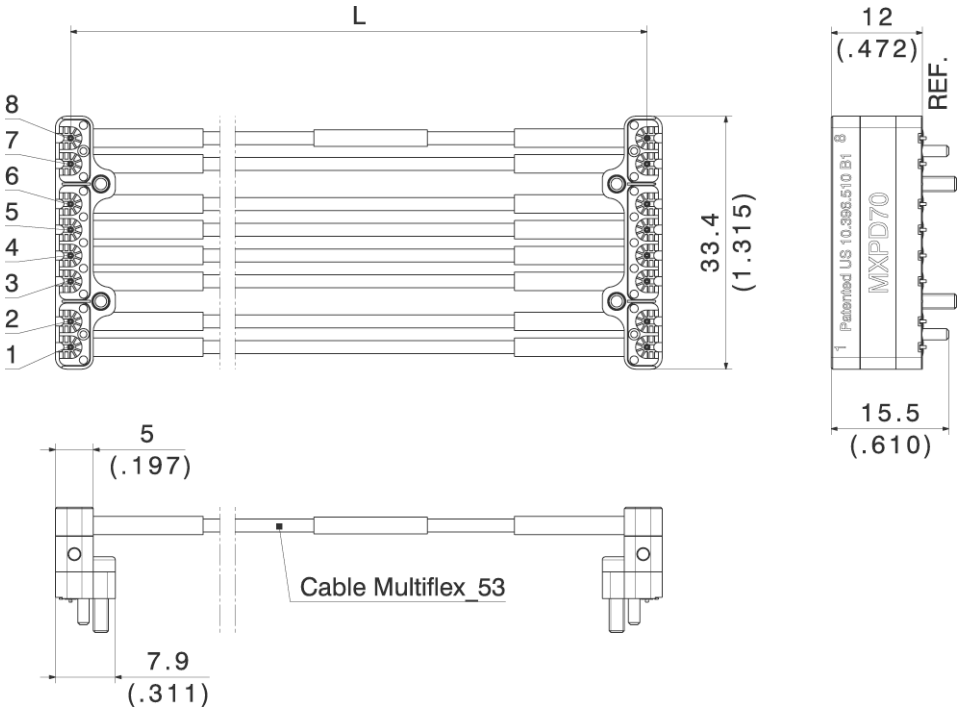
Ordering information

Type 1×8 ganged	Item number	Length	Note
MF53/1x8A_11MXPD/11MXPD/305_1	85236675	305 mm/12 inch	Pin map 1-to-1

MXPD70

Right angle jumper

- 1×8 ganged version



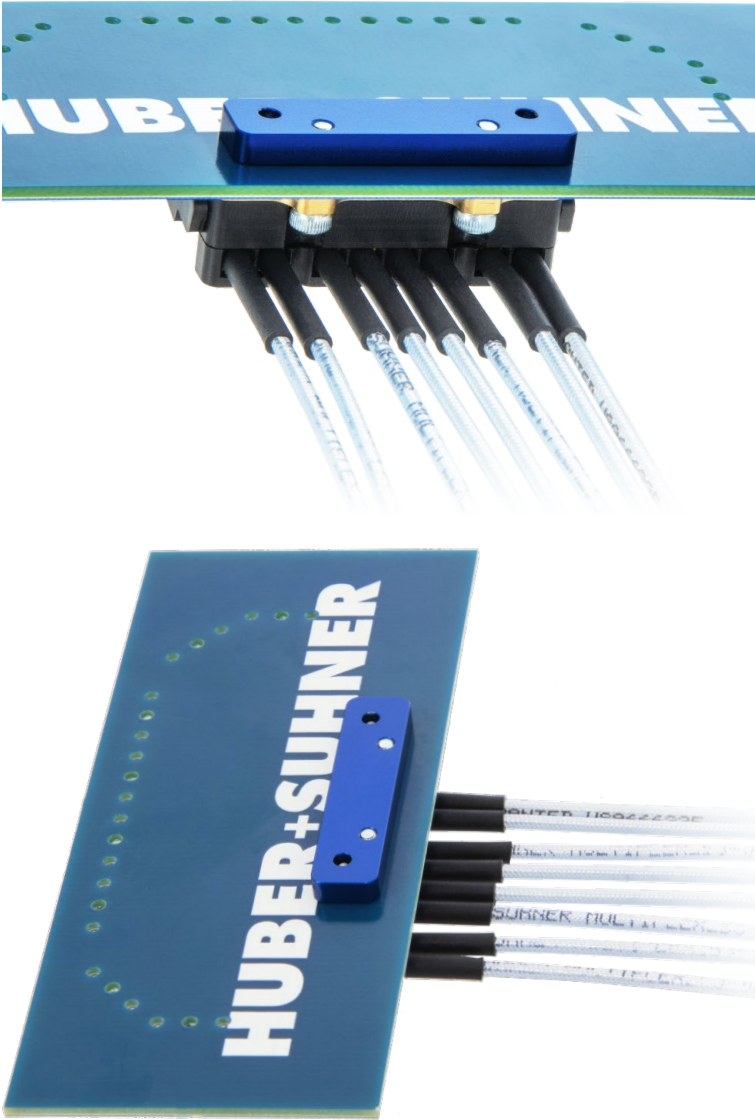
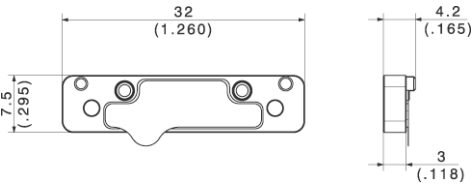
Ordering information

Type 1×8 ganged	Item number	Length	Note
MF53/1x8A_16MXPD/16MXPD/305	85239384	305 mm/12 inch	Pin map 1-to-8

MXPD70

Board stiffener

- Accessory
- Compatible with straight and right angle version

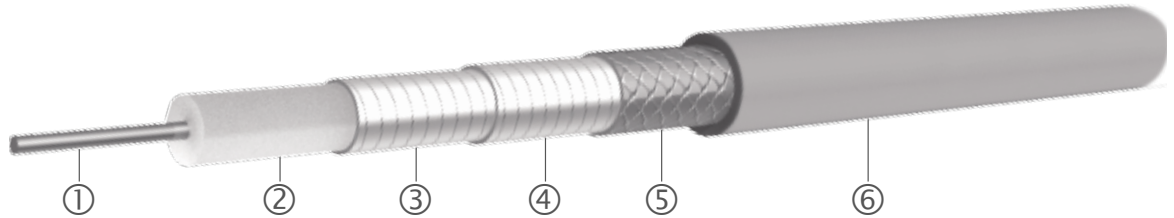


Ordering information

Type	Item number	Length	Note
73_Z-0-0-1100	85239367	10 pcs per bag	Sticked to the PCB

MULTIFLEX 53-02

Technical data



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

Electrical cable data					
Impedance					50 Ohm
Operating frequency					100 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 $a_{25} = a \cdot \sqrt{f} \text{ (GHz)} + b \cdot f \text{ (GHz)} \text{ (dB/m)}$					

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



Comprehensive design data

3D electromagnetic simulation solutions for all your design needs – for current and future PCB designs

HUBER+SUHNER offers a specialized design service to create tailored and optimized PCB footprints. Leveraging advanced 3D electromagnetic field simulation, we guarantee that HUBER+SUHNER's board connectors deliver top-notch performance. Our design-in service is customized to address the unique requirements of each project, ensuring a seamless integration of our board connectors into your PCB designs. The deliverables include DXF files, Gerber files, simulated S2P files (Touchstone format), and a comprehensive report (DOC file format).

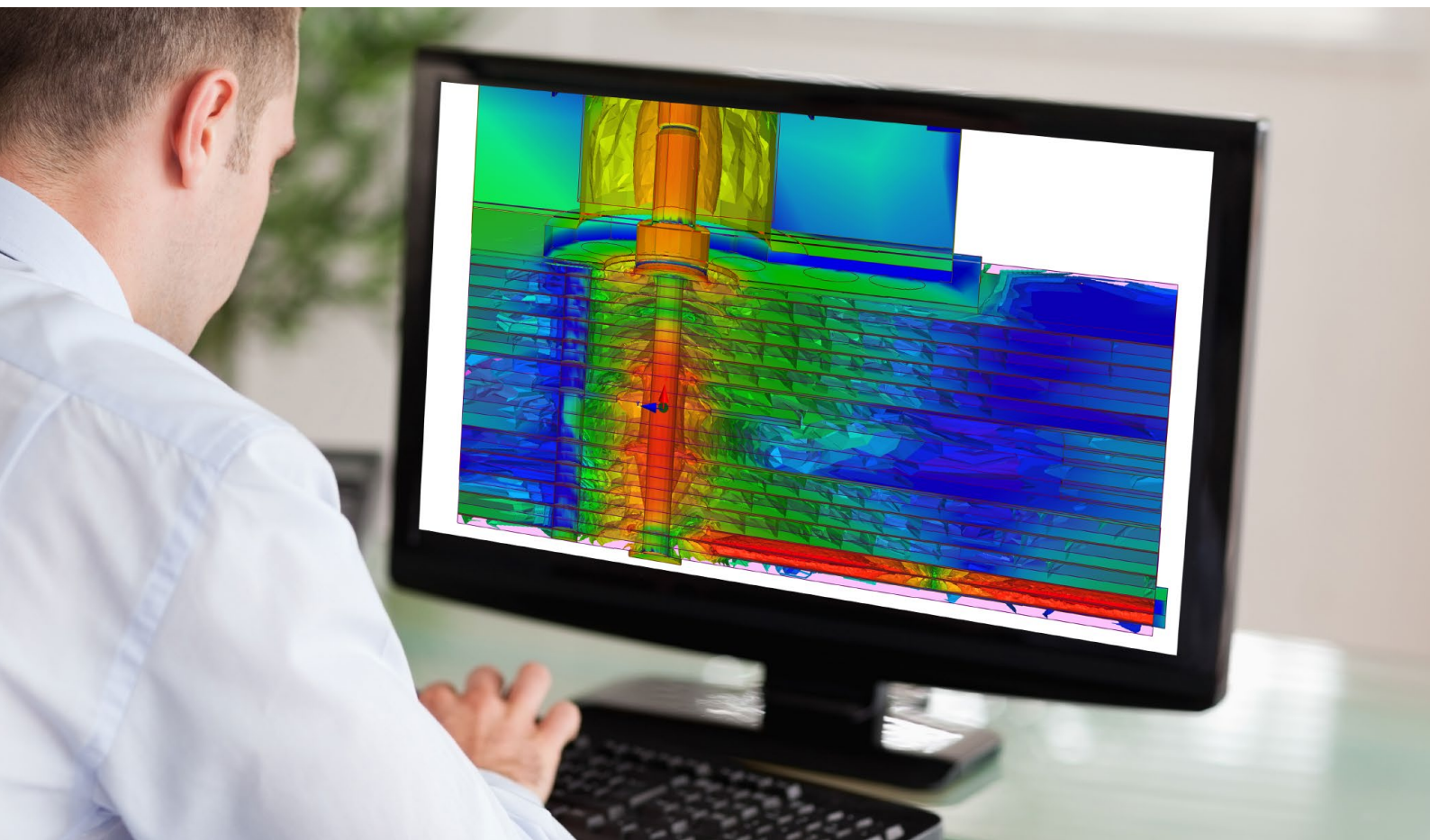


Encrypted 3D component models

HUBER+SUHNER provides encrypted 3D component models for the single and multicoax PCB connector portfolio. These 3D components models are compatible with ANSYS HFSS and/or Cadence Clarity.

S-parameter files

The availability of measured S-parameter files for HUBER+SUHNER components upon request allows to incorporate these components into electrical simulations.



Online support tools

HUBER+SUHNER offers a set of online tools which assists you in finding the right product, calculating the electrical performance of specific cable assembly configurations, and inquiring about the desired products once defined.



Product catalog

The e-catalog is primarily designed to help you search for and select standard HUBER+SUHNER products. Structured according to the three technologies of Fiber Optics, Radio Frequency and Low Frequency, the e-catalog provides an overview of cables, connectors, adapters, antennas, fiber management systems, accessories and many more components. Filters specific to each product group allow you to narrow the product list by specific properties, such as operating temperature, impedance, cable diameter or number of single cores.



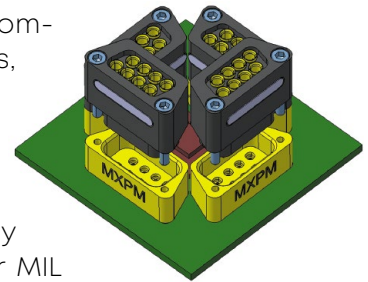
RF assembly configurator

Standard RF and Microwave Assembly Configurator for requesting a quotation. Provides an overview of possible standard HUBER+SUHNER RF assembly variants and product information about the available components, which include coaxial cables, connectors and labelling sleeves.

Additional services

Customized connector solutions

Certain applications require specialized solutions beyond our comprehensive range of connectors and adaptors. To address this, we provide custom-engineered solutions by leveraging design techniques and advanced development tools. These powerful tools enable us to swiftly demonstrate the feasibility of our products, including rapid prototyping, within tight timeframes. Moreover, our in-house type testing capabilities allow us to thoroughly verify the design through rigorous verification tests, following either MIL standards or your specific requirements.



For further documentation, please go to
www.hubersuhner.com/en/newsroom/blog-and-literature/literature

Test+Measurement

General catalogue



RF Coaxial connectors

General catalogue



RF Board Connector:

The key to maximize
your performance

application note

RF Board Connector: Footprint Optimization for optimal Return Loss Performance

Introduction

The continuous demand for higher data rate is pushing the frequency boundary and performance level of Radio-Frequency (RF) components used in a test setup. For design validation testing (DVT), test components including RF test assemblies and RF board connectors, must be "electrically transparent" to ensure a reliable characterization of the device under test (DUT). While low frequency / low data rate applications can forgive the use of a generic footprint for RF board connectors, today's bandwidth to support data rate of 56Gbps and beyond requires an optimized footprint designed and matched to a specific board layout to ensure best performance in the desired frequency range. Design cycles are getting shorter to respond to the faster pace of innovation of the markets (semiconductor, 5G, automotive...), and it is tempting to create a shortcut in the design library with a default layout. However, consequences on performance can be significant, often requiring a new design loop which is time consuming and expensive.

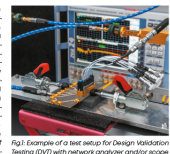


Fig.1 Example of a test setup for Design Validation Testing (DVT) with network analyzer and/or scope

HUBER+SUHNER

HUBER+SUHNER AG
Radio Frequency
Degersheimerstrasse 14
9100 Herisau
Switzerland
Phone +41 71 353 41 11
hubersuhner.com

HUBER+SUHNER is certified to ISO 9001, ISO 14001, ISO 45001, EN/AS 9100, IATF 16949 and ISO/TS 22163-IRIS.

Waiver

The facts and figures provided herein are for information only and do not represent any warranty of any kind.