Welcome

Single Pair Ethernet

Antonio Gordillo
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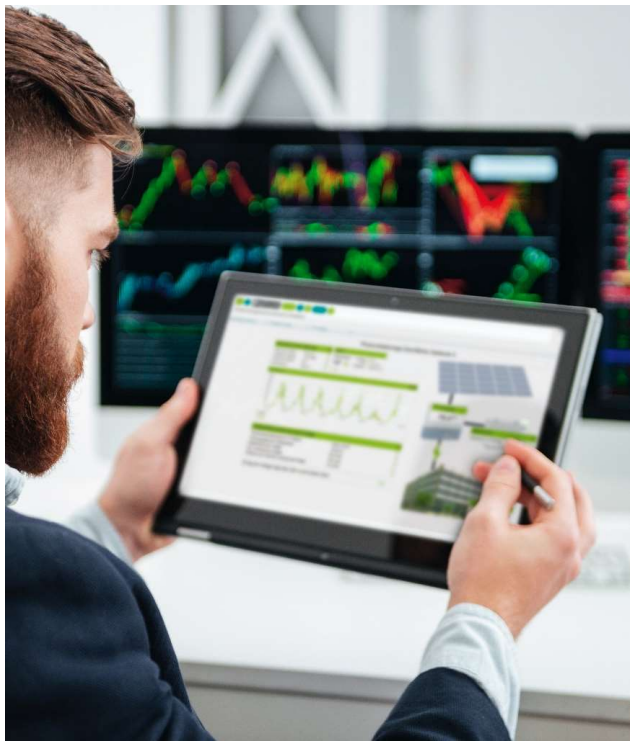
- What is SPE ?
- SYSTEM ALLIANCE
- Products
- Benefits and Applications



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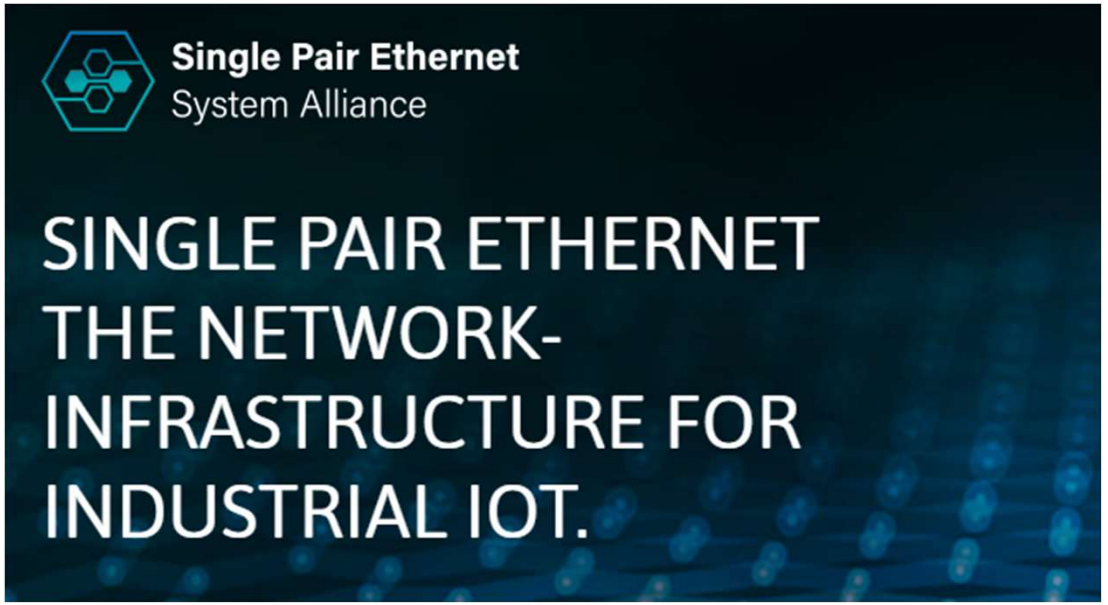
www.singlepairethernet.com

System Alliance



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Definition

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An introduction to Single Pair Ethernet (SPE)

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Members

Telegärtner

Telegärtner Karl Gärtner GmbH

PHOENIX CONTACT

PHOENIX CONTACT Deutschland GmbH

Weidmüller

Weidmüller Interface GmbH & Co. KG

Rosenberger

Rosenberger Hochfrequenztechnik GmbH & Co. KG

R&M

Reichle & De-Massari GmbH

DÄTWYLER

Dätwyler Cabling Solutions AG

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Single Pair Ethernet System Alliance

Fluke Deutschland GmbH

Kyland

SICK AG

ORing Industrial Networking Corp.

Microchip Technology Inc.

EFB ELEKTRONIK

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Draka Comteq Germany GmbH

Vericom

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EBV Elektronik

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AimValley B.V.

ACOME

Acome

EmCom

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Fischer Connectors

KEBA

MAGCOM

ILME S.p.A.

AEM International Ltd

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Single Pair Ethernet: A new standard for a smart world

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Single Pair Ethernet

Standards

Technical standards and norms relevant to connection technology relating to Single Pair Ethernet (SPE)											
		IEEE 802.3					IEC 11801		ANSI/TIA		
		cg	bw	bp	ch	bu	-3	-2	-568.0-D-2 (TR-42.1)	-568.5 (TR-42.7)	-1005-A-3 (TR-42.9)
Status		✓	✓	✓	TBD	✓	✓	✓	TBD	TBD	TBD
Data transmission properties		10 Mbps 1,000 m	100 Mbps 15 m	1,000 Mbps 15/40 m	<10,000 Mbps 15 m	60 W, max.					
IEC 63171	-1	✓*	not specified	not specified	not specified	not specified	✓	not specified	✓	✓	not specified
	-2	✓									
	-3	✓									
	-4	✓									
	-5	✓									
	-6	✓*					✓		✓	✓	

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Standard

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Data transmission properties		10 Mbps 1,000 m	100 Mbps 15 m	1,000 Mbps 15/40 m	<10,000 Mbps 15 m	60 W, max.					
Relevance to											
As a general rule: application-specific requirements are being defined by user organizations in particular, not by means of the standards (see the following table)	Industry	✓	–	○	–	✓	–	–	–	–	✓
	Generic cabling	–	–	–	–	–	✓	✓	–	–	–
	Buildings	✓	–	○	–	✓	–	✓	–	✓	✓
	Process	✓	–	–	–	○	○	–	–	–	✓
	Automotive	–	✓	✓	✓	✓	–	–	–	–	–

** In the IEEE 802.3 cg standard, those are referred to as connectors that "may be used"*

✓ relevant ○ partially relevant – not relevant

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Standardization

SPE

What is the current status of standardization?

There is no binding standard yet. Like circular connectors, various connector faces are still undergoing standardization. These are already listed in IEC 63171. The work on IEC 63171 is not yet completed.

What role do user organizations play in the standardization process?

IEC standardization is the first step in the establishment of new connector systems. However, it is generally true that a connector face does not achieve market relevance even with international standardization. This is often due to national and international user organizations such as PROFINET. They decide which system to use in accordance with the application.

Has the market already agreed on a connector face?

The normative process for SPE systems is currently in progress, but not yet completed. The statement circulated by some manufacturers and the trade press that the market has already agreed on a connector face is therefore incorrect. Important user organizations such as PROFINET are currently forming opinions and will deal with this topic in the future. The following table provides information on the current status of the standardization of connector faces.

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User Organizations

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User organizations relevant to industrial applications							
		PI PROFIBUS · PROFINET	APL	ODVA	AUTBUS	OPC UA	VARAN
Status		TBD	TBD	TBD	TBD	TBD	TBD
Status of SPE definition							
IEC 63171	-1	not specified	not specified	not specified		not specified	not specified
	-2				✓		
	-3						
	-4						
	-5				✓		
	-6						
Relevance to							
Industry		✓	–	✓	✓	✓	✓
Buildings		–	–	–	–	–	–
Process		–	✓	–	–	–	–
Automotive		–	–	–	–	–	–

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SPE

Products

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Single Pair Ethernet

Benefits and Applications

- **Ethernet finally goes the distance! Connectors for Single Pair Ethernet**
- **Single Pair Ethernet will revolutionize industrial networks**
- **Space**
- **Installation**
- **Distance**
- **Cost**

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Ethernet finally goes the distance! Connectors for Single Pair Ethernet

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Single Pair Ethernet will revolutionize industrial networks

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Thank you

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