



SimpliPHY™ Family of Single-Port Fast Ethernet and Gigabit Ethernet PHYs

March 2018

Microsemi's PHY Technology

Delivering Innovations in Timing Accuracy and Security

Over a Decade of PHY Experience

- 10/100, 10/100/1000 and 10GE
- Extensive portfolio of 1-12 port copper & dual-media PHYs in production
- Hundreds of millions of PHY ports shipped

Innovative Technology

- World-class mixed-signal technology integration
- Enables compliance to ITU-T Class A / Class B 1588 timing requirements
- Enables 256-bit AES Layer 2 security that preserves 1588 timing

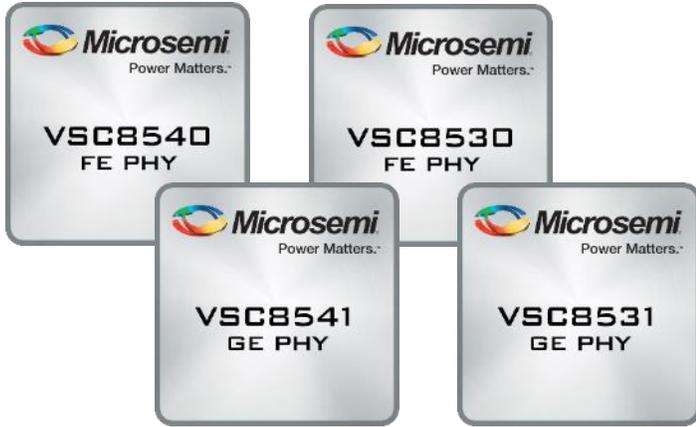
Leverages Your Software Investment

- Entire portfolio of PHY products use a common API
- Application software includes full portfolio of switches and PHYs

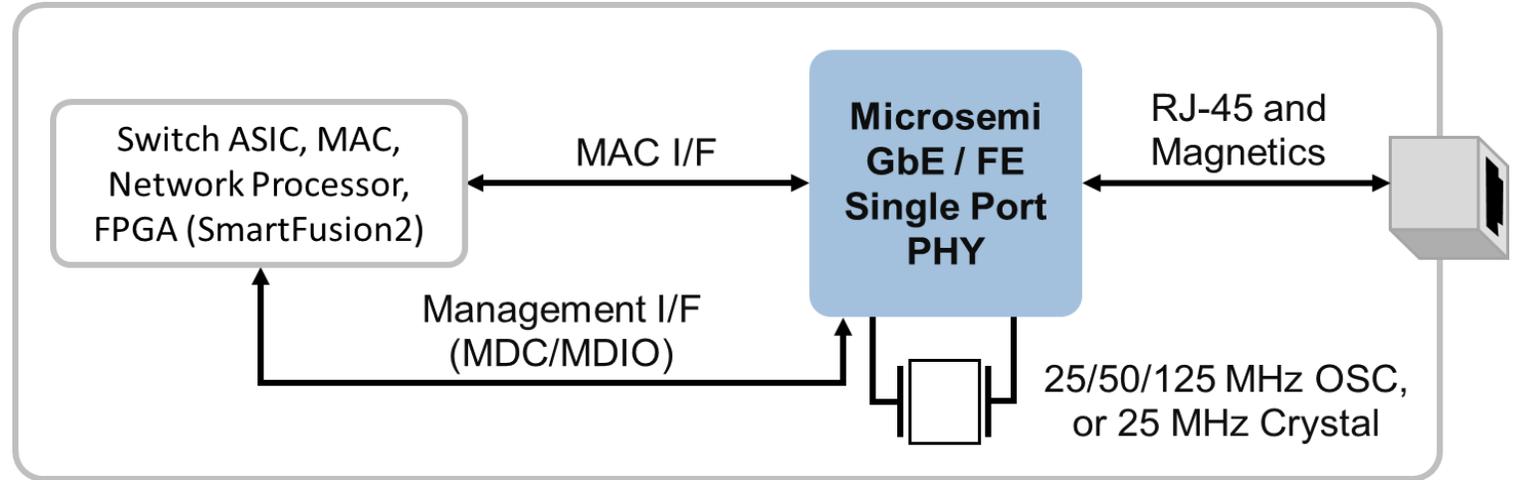
Highly Reliable and Fully Tested

- <1 DPPM (defective parts per million)
- Robust set of validation and characterization tests performed

Introducing Microsemi's Newest SimpliPHY Single-Port FE/GbE PHYs



In Production



- Six new PHYs with a differentiated set of features addressing:
 - **Cost**
 - **Reliability**
 - **Timing Accuracy**
 - **Interoperability**

Part Number	Speed		MAC Interface				Timing Support	Package Size	I-Temp
	GE	FE	RGMII	RMII	GMII	MII			
VSC8541XMV-01	■		■	■	■	■	SyncE	8x8mm	
VSC8541XMV-04	■		■	■	■	■	SyncE & SOF	8x8mm	■
VSC8531XMW-01	■		■	■				6x6mm	
VSC8531XMW-04	■		■	■				6x6mm	■
VSC8540XMV-04		■	■	■			SyncE	8x8mm	■
VSC8530XMW-04		■	■	■				6x6mm	■

Microsemi's New Single-Port PHY Family: Value Proposition

■ Lower cost

- Smaller packages, flexible clocking/management, and drive strength adjustment mean **BOM savings and simpler/shorter design cycles**
 - Adjustable interface drive strength helps **controls system EMI/EMC**

■ Improved reliability

- **Line monitoring features** indicate when a link **has** failed, and other functions provide early indications if a 1000BASE-T link **may** fail
- **SEU protection** (VSC8541XMV-04)

■ Interoperability

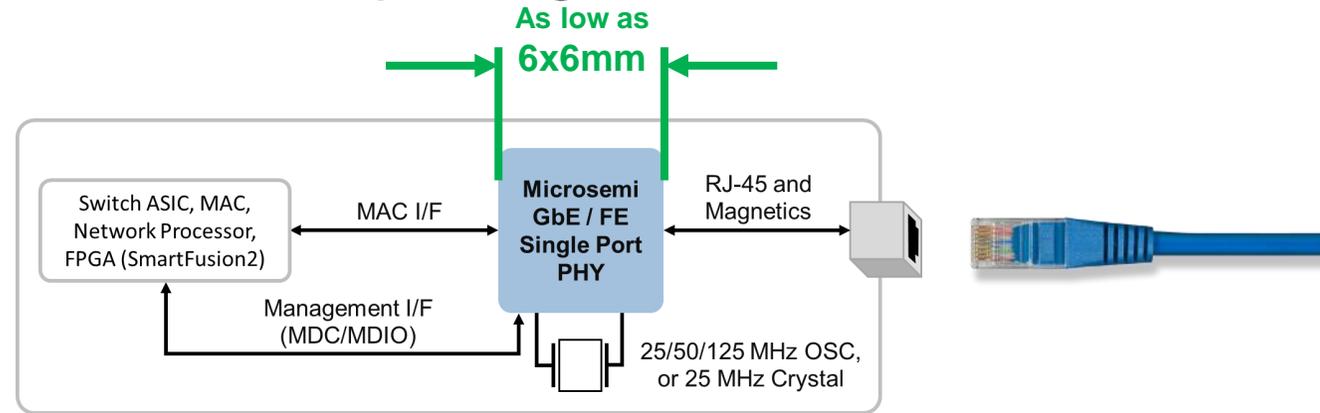
- Flexible MAC interface options and **widest LVCMOS voltage range**
- **Hardware pin strapping**

■ Timing over packet timing accuracy

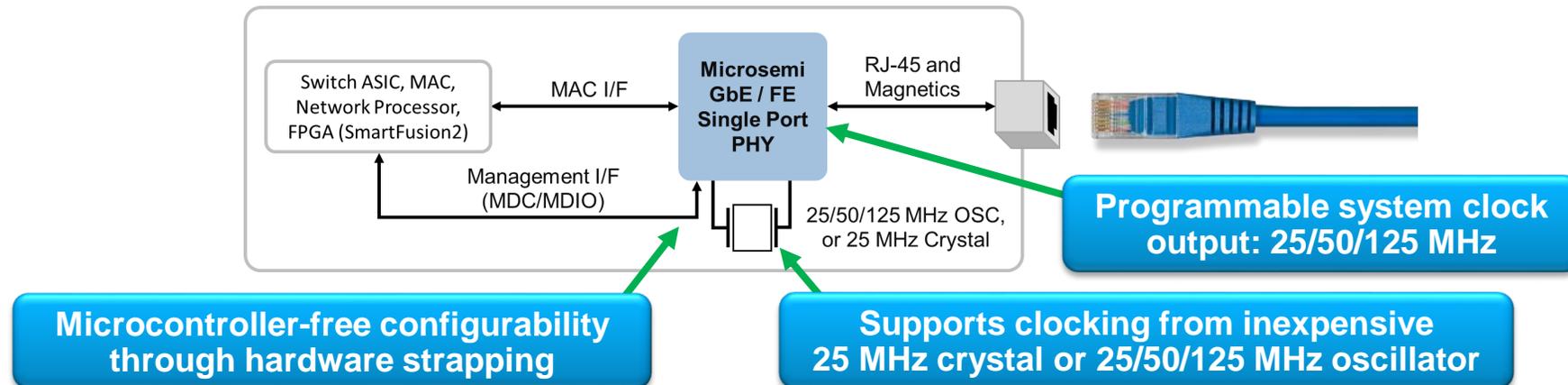
- Synchronous Ethernet and Start-of-Frame (SOF) capabilities to enable systems with **ns-level timing accuracy**

Microsemi's New Single-Port PHY Family: Lowers Cost

- Saves board space with smaller package sizes:

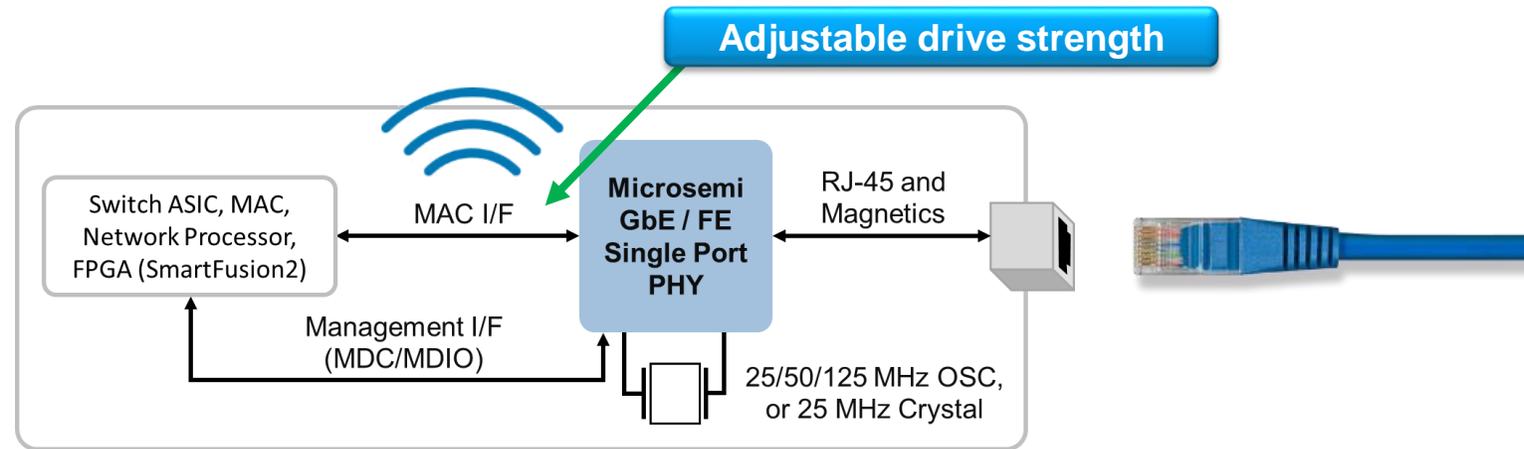


- Lowers BOM cost with flexible clocking/control options:



Microsemi's New Single-Port PHY Family: Lowers Cost

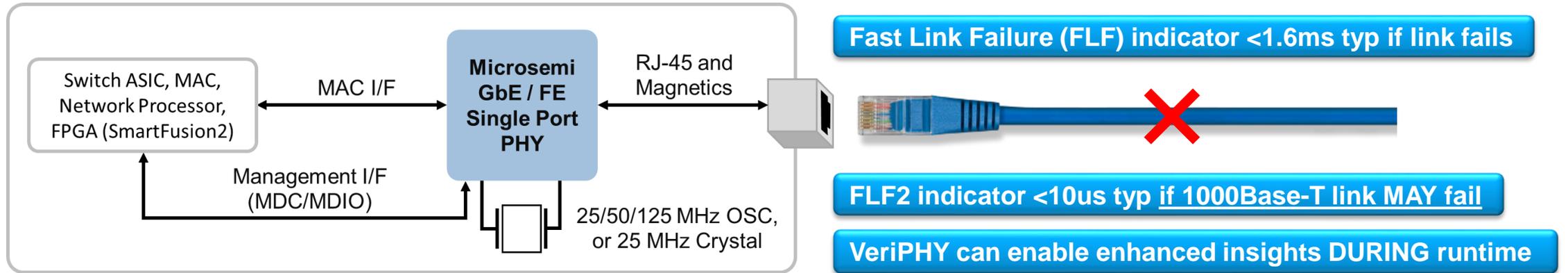
- Controls system **EMI/EMC** with adjustable drive strength:



Saves cost by shortening design cycles and simplifying the system design

Microsemi's New Single-Port PHY Family: Increases Reliability

- Ensures uptime by monitoring the quality of an active line:

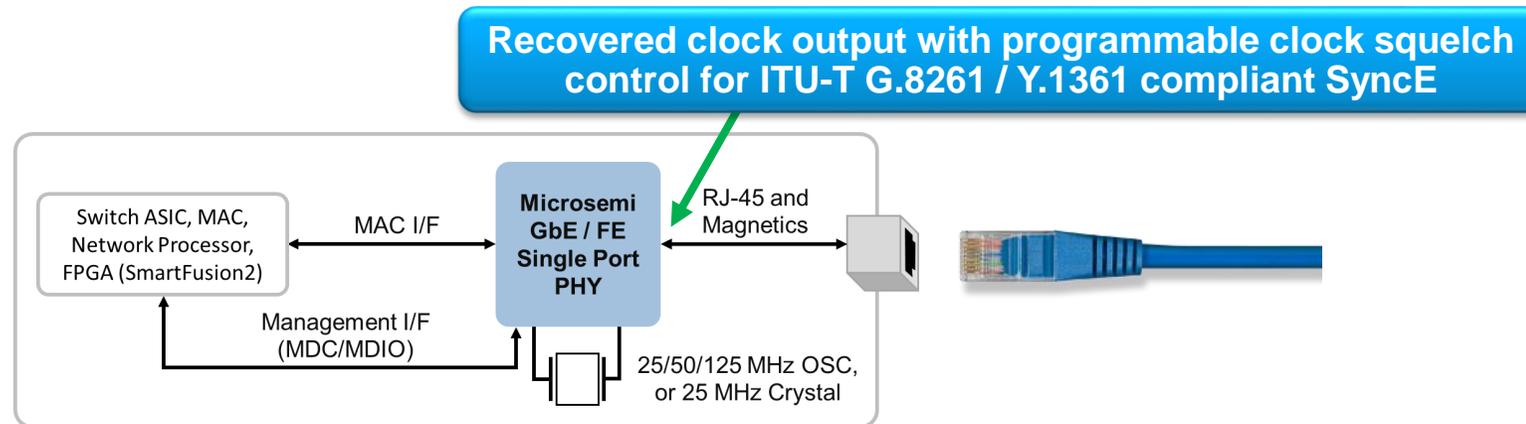


- Protects against single event upsets (SEUs):

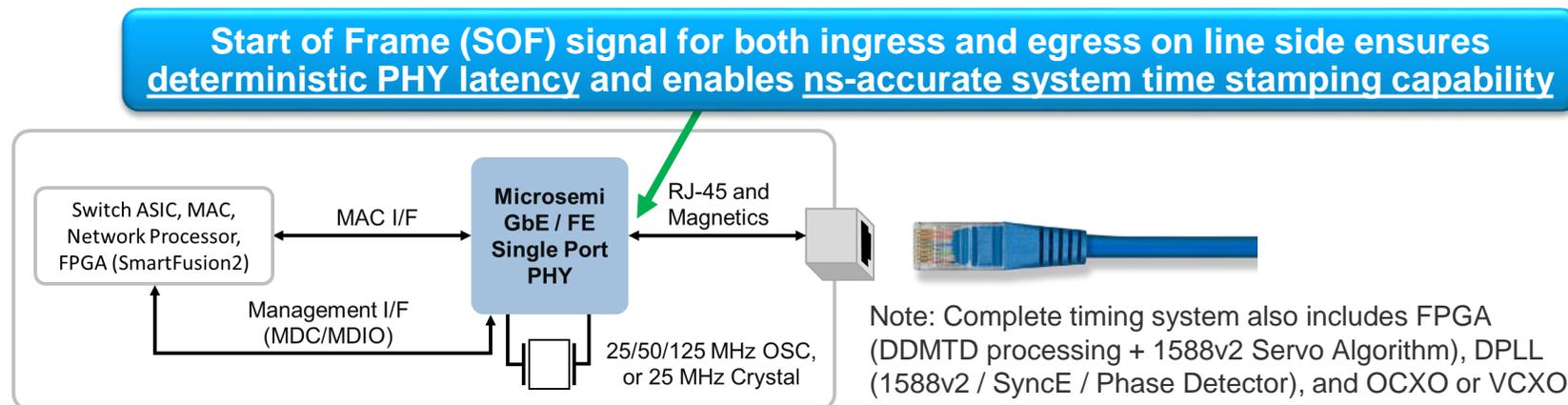
- Low alpha mold compound in VSC8541XMV-04 protects against ionizing particles that could cause errors in mission-critical systems (FIT < 80)

Microsemi's New Single-Port PHY Family: Enhances Timing Accuracy

- Adds **Synchronous Ethernet** support:

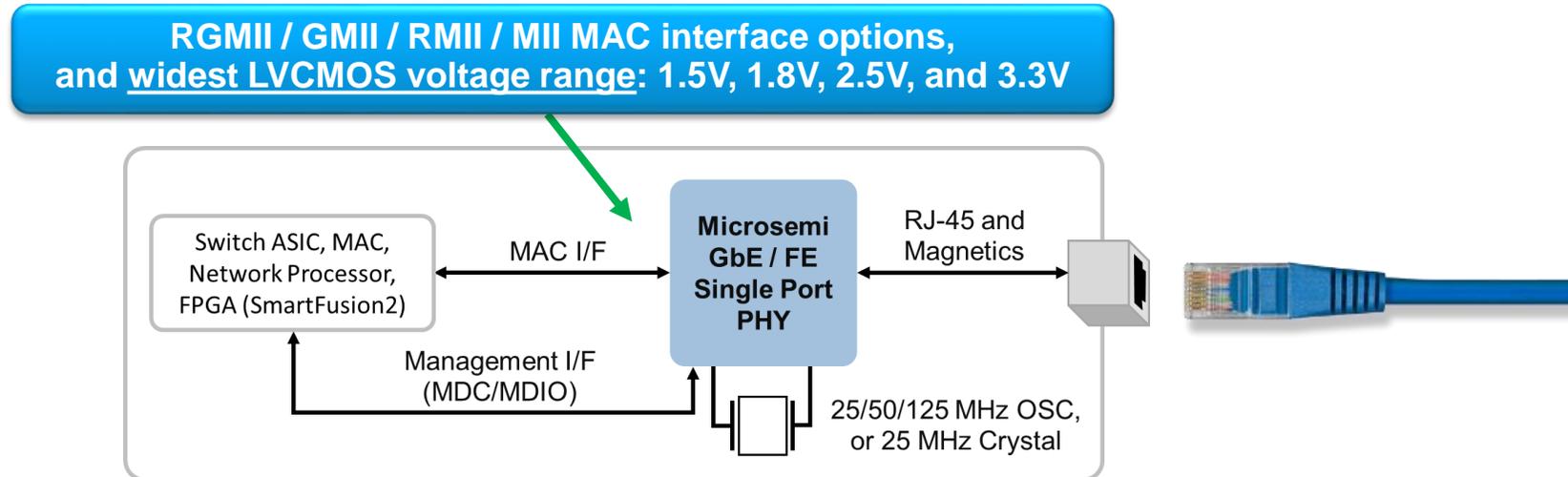


- Includes **1588v2 precision time protocol system support**:



Microsemi's New Single-Port PHY Family: Increases MAC Interoperability

- Future-proofs designs with industry's most flexible interface:



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VSC8541XMV-04	■		■	■	■	■	SyncE & SOF	8x8mm	■
VSC8531XMW-01	■		■	■				6x6mm	
VSC8531XMW-04	■		■	■				6x6mm	■
VSC8540XMV-04		■	■	■		■	SyncE	8x8mm	■
VSC8530XMW-04		■	■	■				6x6mm	■

Microsemi's New Single-Port PHY Family: Datasheets and Other Resources

- Datasheets, application notes, 4-layer PCB reference designs and IBIS models are available now
- Available to all registered users (no NDA needed!)
- Sign-in or register for a MyMicrosemi account at <https://my.microsemi.com/>
- Product web page links:
 - **VSC8530**: <https://www.microsemi.com/product-directory/fast-ethernet-phys/3929-vsc8530>
 - **VSC8531**: <https://www.microsemi.com/product-directory/gigabit-ethernet-phys/3901-vsc8531>
 - **VSC8540**: <https://www.microsemi.com/product-directory/fast-ethernet-phys/3930-vsc8540>
 - **VSC8541**: <https://www.microsemi.com/product-directory/gigabit-ethernet-phys/3886-vsc8541>

Summary

- Microsemi is an established supplier of Ethernet PHY technology with a diverse portfolio of 1-12 port copper/dual-media products
- Newest single-port family of Fast Ethernet and Gigabit Ethernet PHYs include features that address:
 - Lower cost with BOM savings and shorter design cycles
 - Improved reliability with line monitoring and SEU protection
 - Enhanced timing accuracy with SyncE, and SOF features for IEEE1588-based systems
 - Interoperability at the MAC interface and as part of full solution
- Part of a complete solution from Microsemi
 - In addition to PHYs, solution includes Ethernet Switches, FPGAs, Clock Management, Power Management, and Power over Ethernet (PoE) products

Learn more at www.microsemi.com



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