

# OPTICAL COMMUNICATIONS USE CASE – A NEW ODI SOLUTION

EMBEDDED TECH TRENDS 2023  
*PATRICK MECHIN, CEO*



The background features a light gray wireframe pattern of intersecting lines that create a sense of depth and perspective. A large, white, trapezoidal shape is positioned in the center, serving as a backdrop for the text.

# BRIDGING MARKET

# WHAT PROBLEM WE SOLVE

## Measurements applications

5G Wireless  
Test & Measurement  
Phased Array MIL-Aero  
MIL Electronic Warfare  
MIL Communication systems

## Technology needs

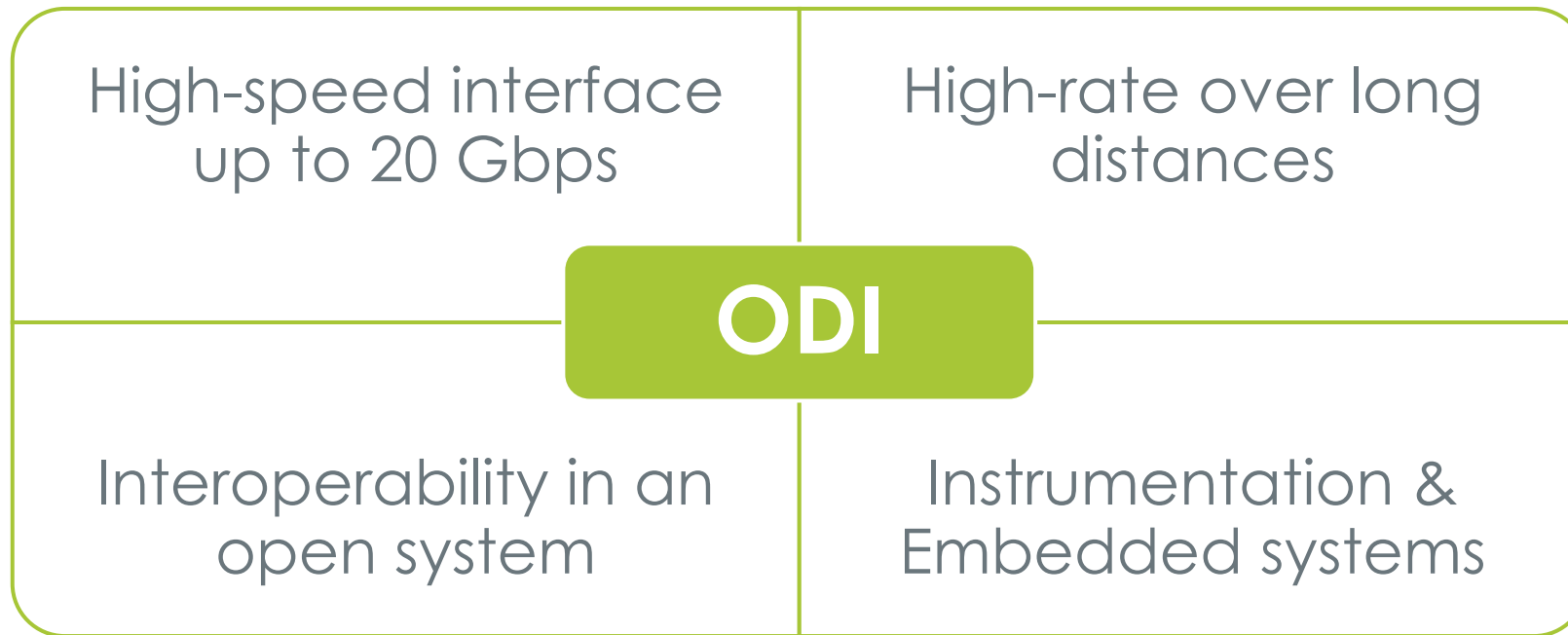
Optical communications  
High-speed & High-density  
FPGA

**TECHWAY  
expertise**

Perfect fit to provide a **PCIe ODI interface**

# WHAT IS ODI

- **O**ptical **D**ata **I**nterface
- Defined by the AXIe Consortium ([www.axiestandard.org](http://www.axiestandard.org))



# HOW IT WORKS

- The ODI standard leverages **three layers** of technology



# TECHWAY ODI INTERFACE

- Bridging standards & technologies

## Standards

- PCI-SIG
- VITA 49
- VITA 57.4 (FMC+)

## Technologies

- FPGA
- Interlaken
- Optical FireFly™

# TECHWAY ODI INTERFACE

- 1 ODI port @ 16 Gbps

- Optical technology  
12 links @ 14 Gbps

Optical  
FMC+

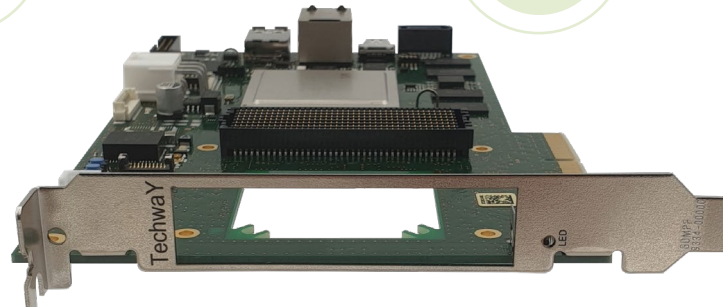
1



- Interlaken standard

FPGA  
processor

2



- VITA 49 standard

Software  
tools

3



# 20+ YEARS EXPERTISE

- Partner of ODI ecosystem

FPGA, Interlaken,  
Communication protocol



Optical solutions



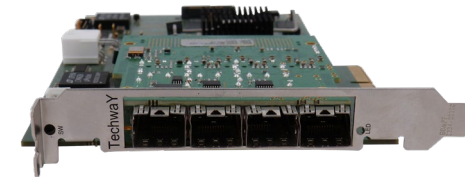
VITA 49 & VITA 57



- High-speed interface

sFPDP

VITA 17.1 and VITA 17.3  
standards

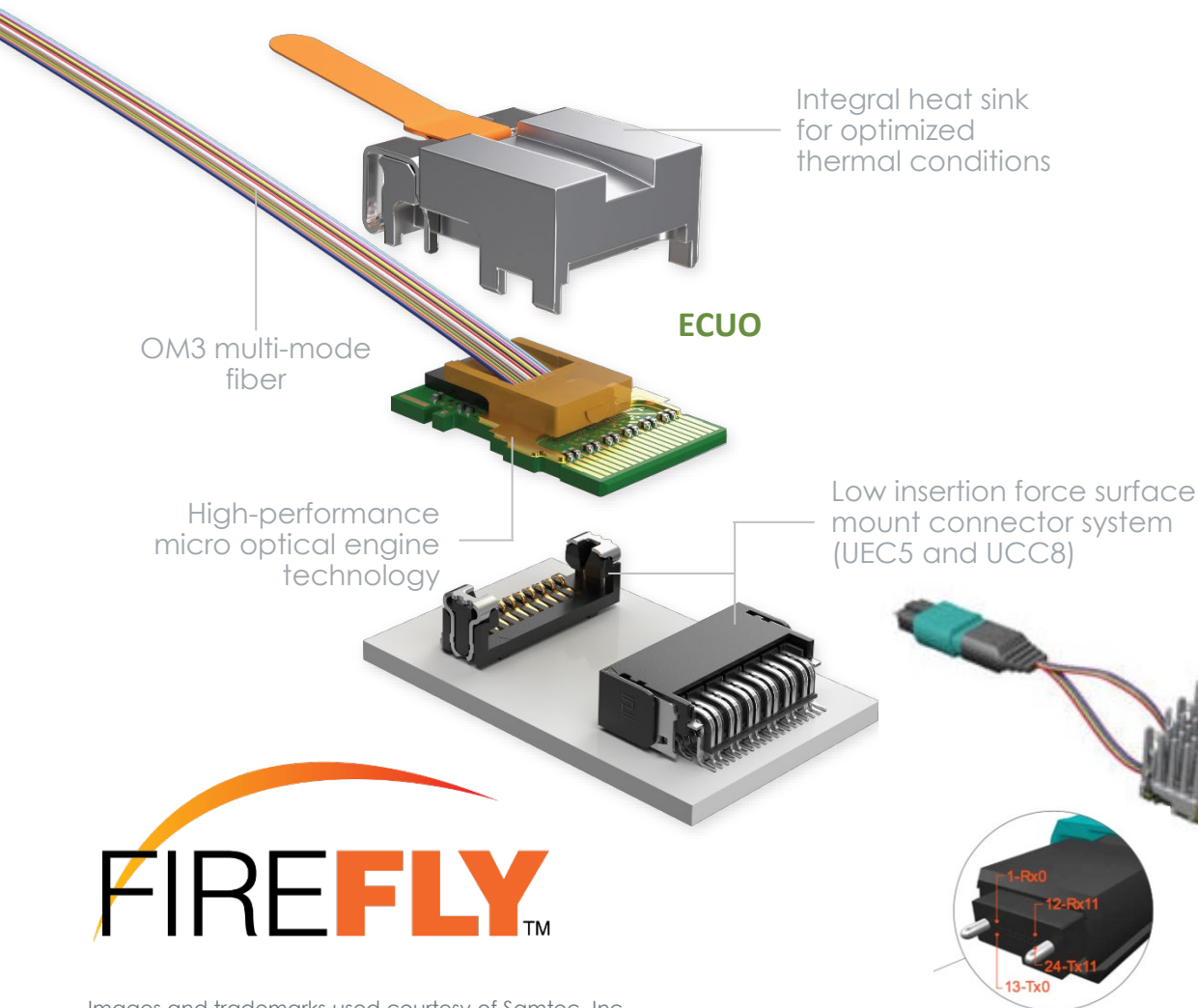


ARINC 818

Avionics Digital Video Bus







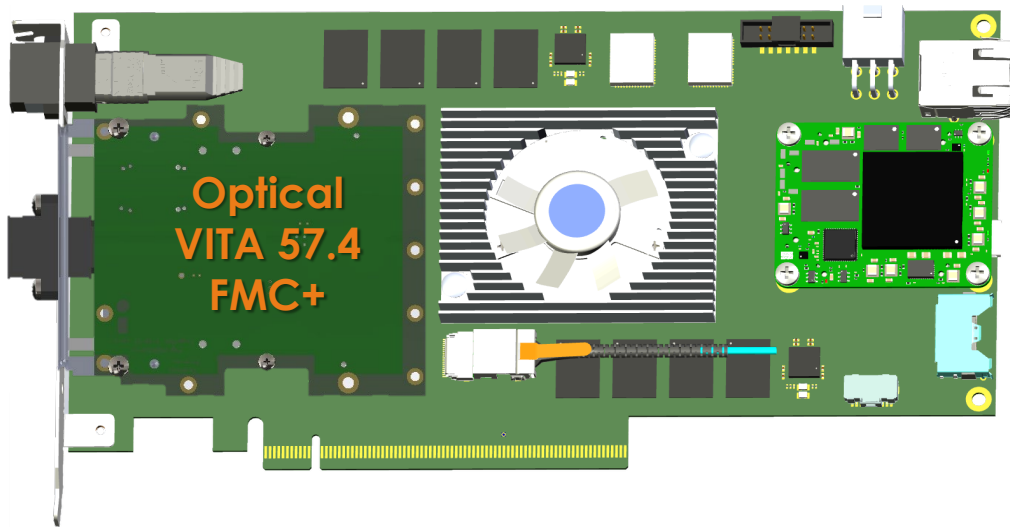
## ■ FireFly™ Optical Micro Flyover System™





- Data connection is taken “off PCB” simplifying layout and enhancing SI
- Small footprint allows for higher density close to ASIC
- 12-lane multimode optics
- 12.5/14.1 Gbps data rates
- Interlaken Protocol
- Flow Control

**FIREFLY™**

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# WRAP-UP



-  Unique ODI PCIe interface
-  Up to 16 Gbps
-  Windows and Linux drivers
-  Cost-effective solution

**Thank you for  
your attention**



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