



Product Information

SFV-RAY

***CompactPCI® Serial***

Carrier for Vector VN-Series FlexRay & CAN-FD Adapters



## General

The **SFV-RAY** is a CompactPCI® Serial carrier card for the Vector VN7610 and similar Vector FlexRay/CAN-FD compact interfaces.

As a supplier of the automotive industry, Vector is well known for their platform of software tools. By means of the SFV-RAY, Vector solutions can be easily integrated into CompactPCI® Serial systems.

A Vector VN-series interface module can be attached on-board to D-Sub and USB receptacles. Two front panel D-Sub connectors emulate a Vector splitter cable, in order to separate FlexRay and/or CAN ports. The SFV-RAY is equipped with an on-board USB controller and can be installed into any peripheral slot of a CompactPCI® Serial backplane.



## Feature Summary

### *General*

- ▶ PICMG® CompactPCI® Serial standard (CPCI-S.0) peripheral slot card
- ▶ Single Size Eurocard 3U 4HP 100x160mm<sup>2</sup>
- ▶ Backplane connector P1 (PCIe® x1 and/or USB)

### *Eligible Vector Interface Modules*

- ▶ VN7610 FlexRay & CAN FD (SFV-7610-RAY)
- ▶ VN1610 dual CAN (SFV-1610-RAY)
- ▶ VN1611 LIN & CAN (SFV-1611-RAY)
- ▶ Future compact interface modules
- ▶ Module dimensions up to 42x20x65mm
- ▶ For details of Vector hard- and software please refer to <https://www.vector.com>

### *Front Panel Connectors*

- ▶ 4 HP front panel design
- ▶ D-Sub 9-pin male connector 1 (FlexRay A/B, or CAN1, or LIN)
- ▶ D-Sub 9-pin male connector 2 (CAN2)
- ▶ USB 3.0 Type-A connector (option w. on-board USB controller)

### *On-Board Resources*

- ▶ On-board USB 3.0 connector for Vector module attachment (backplane coupled USB3/USB2, requires USB2 enabled backplane slot)
- ▶ On-board D-Sub receptacle for Vector module attachment
- ▶ Option on-board PCI Express® USB 3.0 dual port controller (requires PCIe® enabled backplane slot)
- ▶ Option on-Board USB 3.0 connector for Vector module attachment, on-board USB controller coupled
- ▶ Option USB 3.0 Type-A front connector, on-board USB controller coupled

### *Applications*

- ▶ Test equipment for automotive applications
- ▶ FlexRay, CAN, LIN development, simulation, calibration, analysis
- ▶ Based on 100% original/unmodified Vector hardware and software
- ▶ Industrial automation IIoT
- ▶ Enables rapid integration of Vector tools in CompactPCI® Serial systems

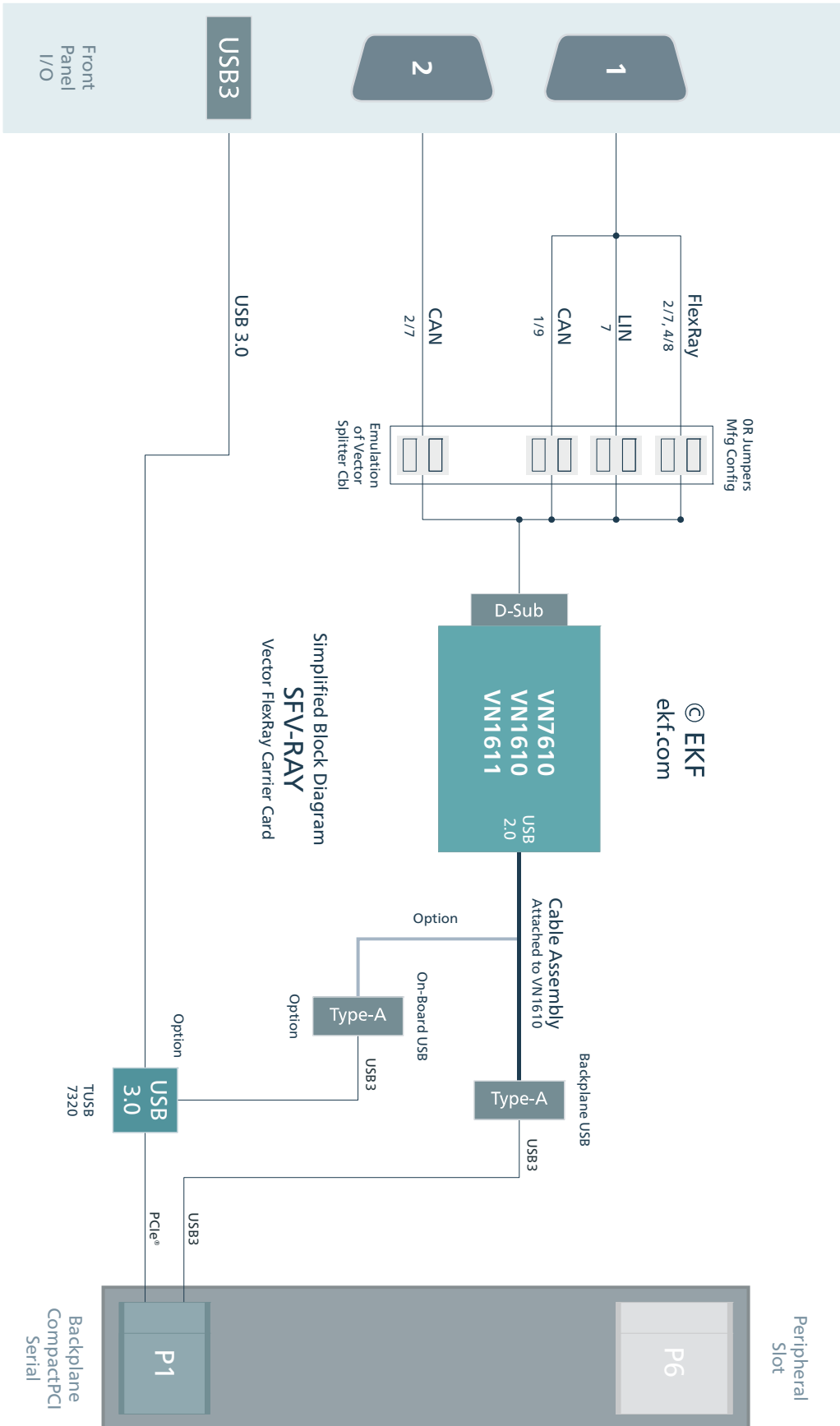
## Feature Summary

### *Environment & Regulation*

- ▶ Designed & Manufactured in Germany
- ▶ ISO 9001 certified quality management
- ▶ Long term availability
- ▶ Rugged solution (coating, sealing, underfilling on request)
- ▶ RoHS compliant
- ▶ Operating temperature: -40°C to +85°C (industrial temperature range for SFV-RAY carrier card)
- ▶ Storage temperature: -40°C to +85°C, max. gradient 5°C/min (SFV-RAY carrier card)
- ▶ Vector VN7610 interface module operating temperature -40°C to +50°C (please refer to vector.com)
- ▶ Humidity 5% ... 95% RH non condensing
- ▶ Altitude -300m ... +3000m
- ▶ Shock 15g 0.33ms, 6g 6ms
- ▶ Vibration 1g 5-2000Hz
- ▶ MTBF 67.7 years (SFV-RAY carrier card)
- ▶ EC Regulations EN55022, EN55024, EN60950-1 (UL60950-1/IEC60950-1)

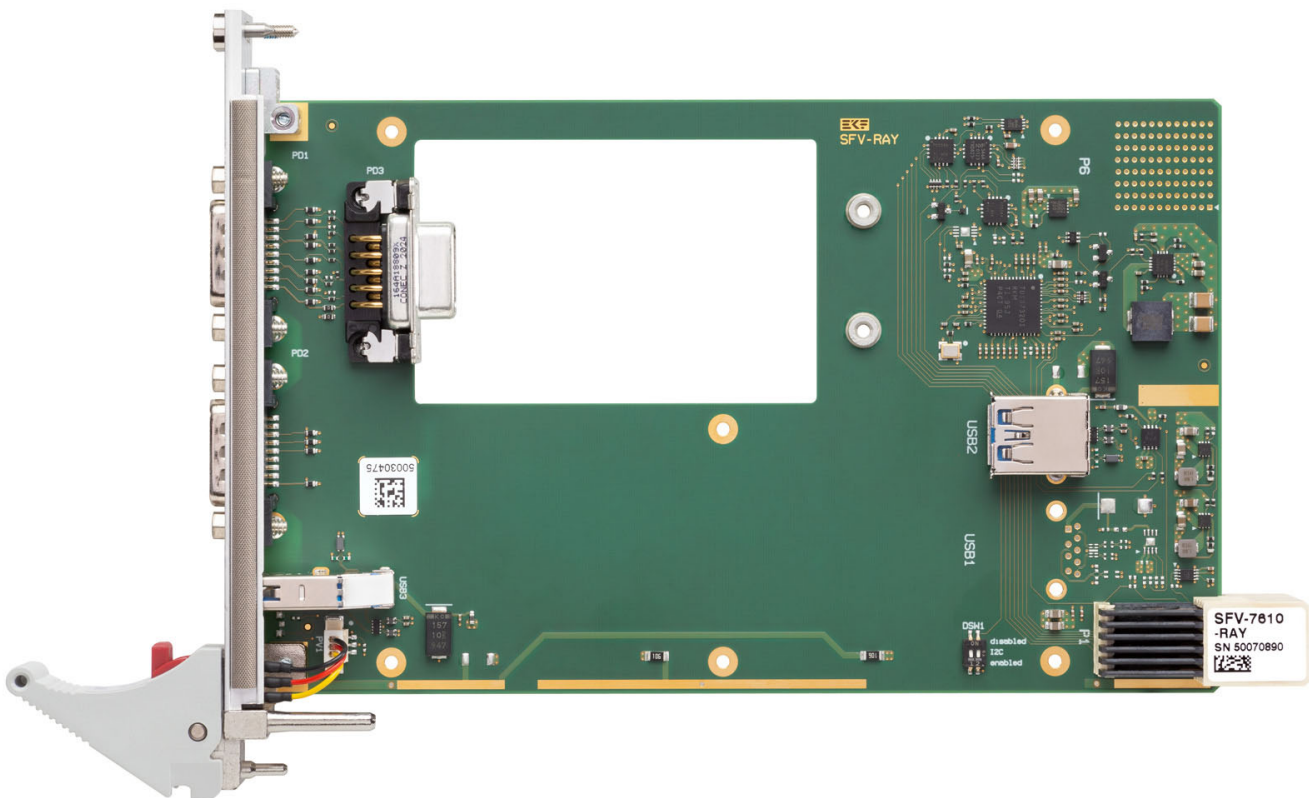
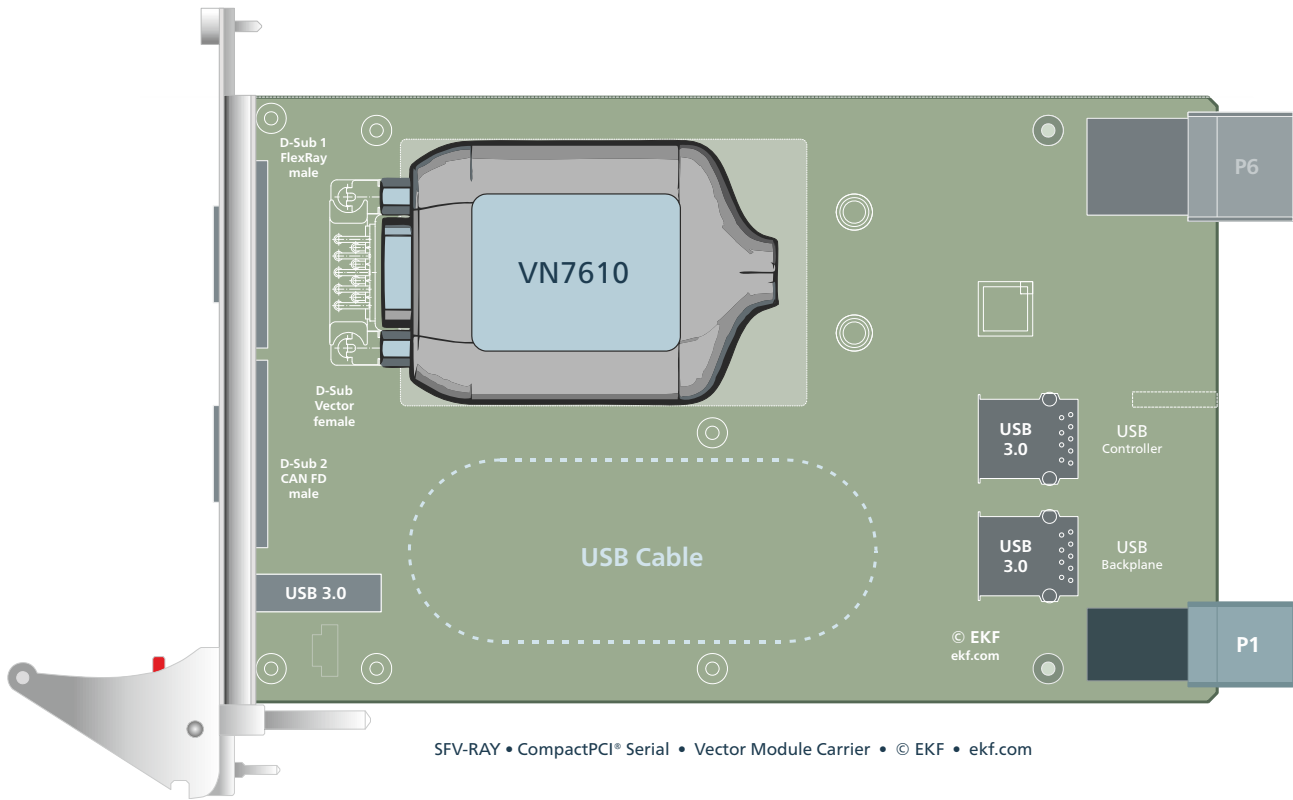


Block Diagram

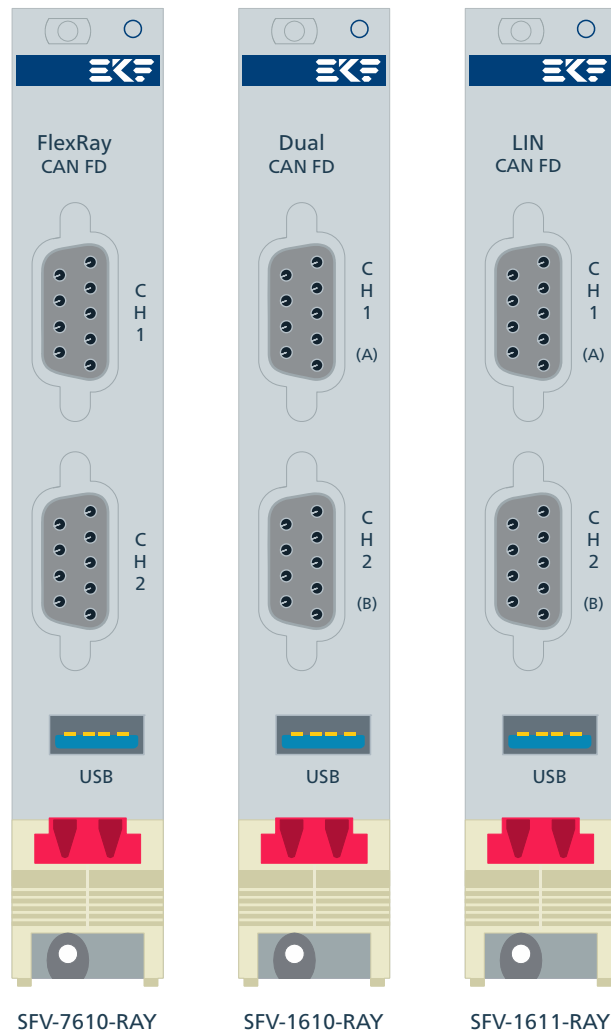




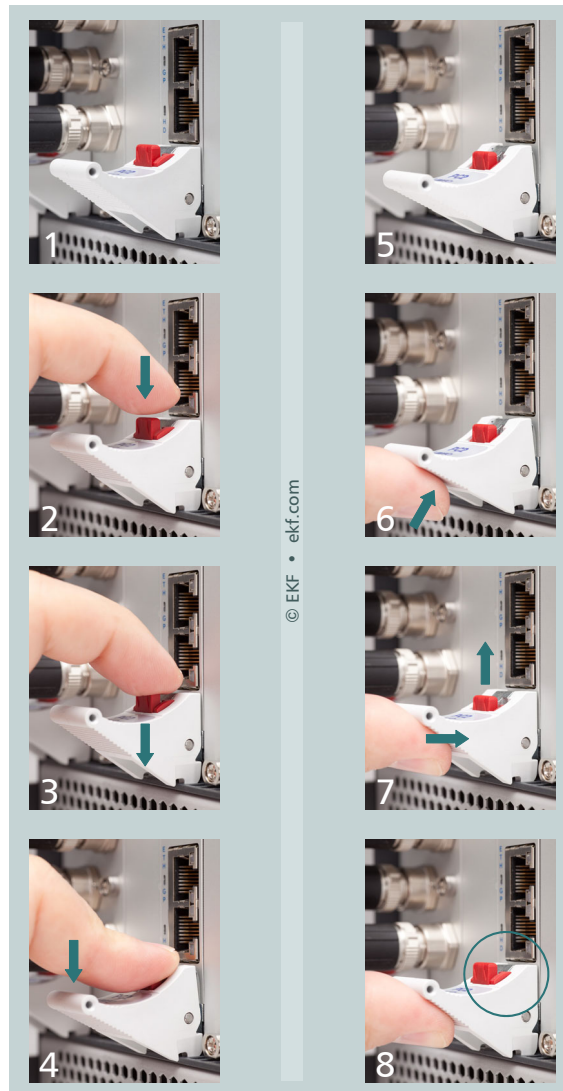
## Component Orientation



## Front Panel



Please note: The front handle is provided with a built-in microswitch, which is used to disable the on-board power circuit when released. Vice versa, the *on-board devices are enabled not before the handle gets locked*. Please refer to the illustration below and make sure that the eject lever has reached its final position for proper board operation, as shown in picture 8. A gentle click should be audible, when the red actuator pin moves into its raised position, indicating that the board is locked and ready for use.



1 - 4: remove board

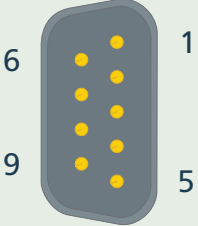
5 - 8: install board

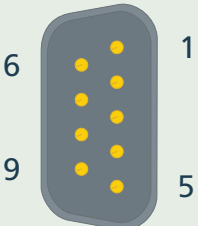
1 & 8: on-board power enabled

2-7: on-board power disabled



## Front Panel Connectors

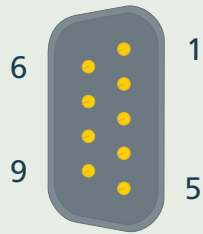
Front Panel D-Sub 1 - FlexRay Vector VN7610 FlexRay A/B				
			1	-
		-	6	
			2 (2)	BM FR A
	BP FR A	7 (7)		
			3 (3)	FR GND
	BP FR B	8 (8)		
			4 (4)	BM FR B
		-	9	
			5	-

Front Panel D-Sub 2 - CAN Vector VN7610 CAN				
			1	-
		-	6	
			2 (1)	CAN Low
	CAN High	7 (9)		
			3 (6)	CAN GND
		-	8	
			4	-
		-	9	
			5	-

front connector pin assignment according to Vector FR/CANcable 2Y

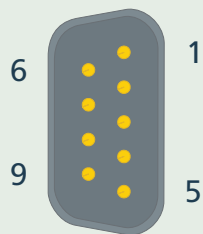
*pin numbers gray/italic reflect the on-board D-Sub connector (VN7610) pin assignment*

Front Panel D-Sub 1 - CAN  
Vector VN1610 CAN Channel 1



		1	-
-	6		
		2 (2)	CAN Low
CAN High	7 (7)		
		3 (3)	CAN GND
-	8		
		4	-
-	9		
		5 (5)	Shield

Front Panel D-Sub 2 - CAN  
Vector VN1610 CAN Channel 2

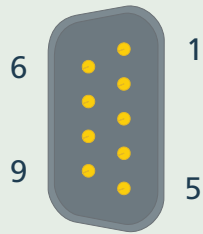


		1	-
-	6		
		2 (1)	CAN Low
CAN High	7 (8)		
		3 (6)	CAN GND
-	8		
		4	-
-	9		
		5 (5)	Shield

front connector pin assignment according to Vector CANcable 2Y

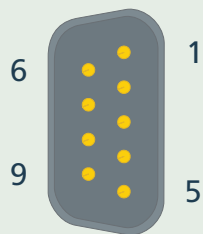
*pin numbers gray/italic reflect the on-board D-Sub connector (VN1610) pin assignment*

Front Panel D-Sub 1 - LIN  
Vector VN1611 LIN



		1	-
-	6		
		2 (2)	-
LIN	7 (7)		
		3 (3)	VB-
-	8		
		4 (4)	PDIS
VB+	9 (9)		
		5 (5)	Shield

Front Panel D-Sub 2 - CAN  
Vector VN1611 CAN



		1	-
-	6		
		2 (1)	CAN Low
CAN High (8)	7		
		3 (6)	CAN GND
-	8		
		4	-
-	9		
		5 (5)	Shield

front connector pin assignment according to Vector CANcable 2Y

*pin numbers gray/italic reflect the on-board D-Sub connector (VN1611) pin assignment*



SFV-1610





SFV-1611





## Related Products

Industrial Ethernet & Fieldbus Module Carrier Cards	
SF1-STUDIO • Dual PCI Express® Mini Card Carrier for Real Time Ethernet Modules	<a href="http://www.ekf.com/s/sf1/sf1.html">www.ekf.com/s/sf1/sf1.html</a>
SF2-CANDY • Quad PCI Express® Mini Card Carrier for CAN Modules	<a href="http://www.ekf.com/s/sf2/sf2.html">www.ekf.com/s/sf2/sf2.html</a>

Ordering Information	
For popular SFV-RAY SKUs please refer to <a href="http://www.ekf.com/liste/liste_21.html#SFV">www.ekf.com/liste/liste_21.html#SFV</a>	
SFV-7610-RAY	Assembly w. Vector 7610 module 2 x FlexRay, 1 x CAN
SFV-1610-RAY	Assembly w. Vector 1610 module 2 x CAN
SFV-1611-RAY	Assembly w. Vector 1611 module 1 x LIN, 1 x CAN

Vector interface adapters referenced are not necessarily scope of any SFV-RAY SKU

For details of Vector hard- and software please refer to <https://www.vector.com>

Please contact [sales@ekf.de](mailto:sales@ekf.de) for ready to use assembly of SFV-RAY carrier card and Vector adapter module

SFV-RAY carrier cards are suitable for either PCIe® or USB enabled CompactPCI® Serial backplane slots. Since the on-board USB 3.0 controller is based on PCIe®, the front panel USB connector is functional only if the SFV-RAY was inserted into a PCIe® enabled backplane slot. Please plug the Vector module USB cable connector to the appropriate on-board USB receptacle.



# Beyond All Limits: EKF High Performance Embedded

Industrial Computers Made in Germany  
boards. systems. solutions.

Document No. 9502 • 9 July 2021

EKF Elektronik GmbH  
Philipp-Reis-Str. 4 (Haus 1)  
Lilienthalstr. 2 (Haus 2)  
59065 HAMM  
Germany



Phone +49 (0)2381/6890-0  
Fax +49 (0)2381/6890-90  
Internet [www.ekf.com](http://www.ekf.com)  
E-Mail [sales@ekf.com](mailto:sales@ekf.com)