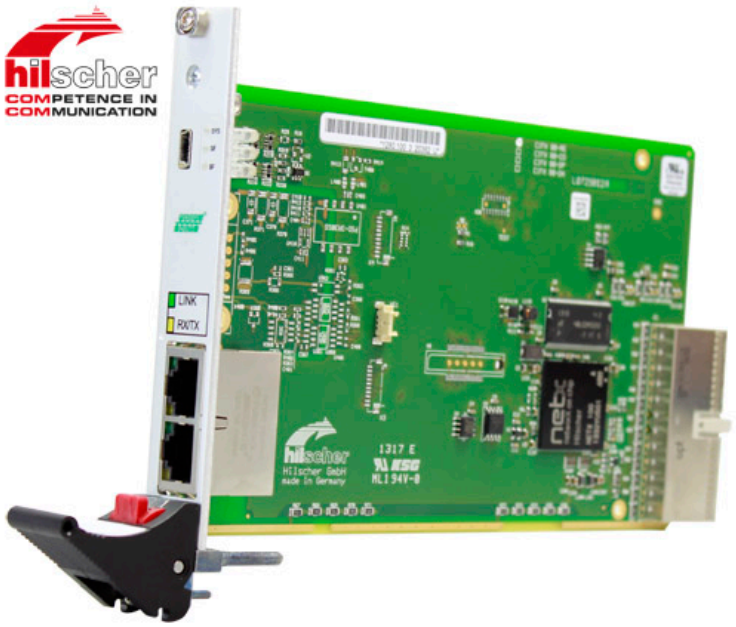
F752 – 3U CompactPCI® Real-Time Ethernet Interface Board

- **4HP 32-bit/33-MHz CompactPCI®**
- **Up to 100 MBit/s real-time Ethernet depending on loaded firmware for**
- **PROFINET (Controller & Device)**
- **EtherCAT (Master & Slave)**
- **Ethernet PowerLink (Controlled Node)**
- **EtherNet/IP (Scanner & Adapter)**
- **OpenModbus (Server & Client)**
- **Sercos (Master & Slave)**
- **VARAN (Client)**
- **Based on netX universal network controller**
- **Optical isolation with 1000 VDC isolation voltage**
- **Driver support for all common operating systems**
- **0 to +70°C screened**

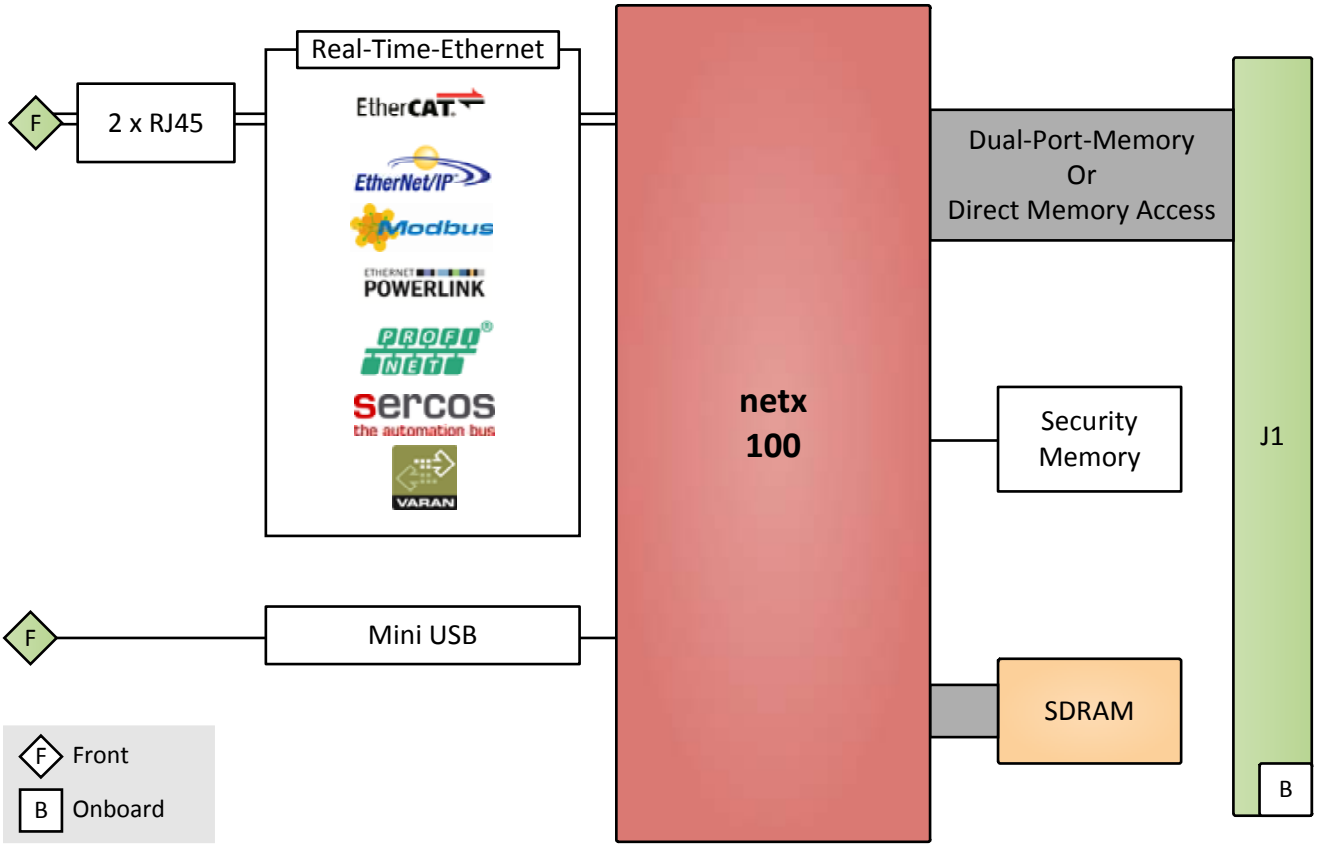


The F752 is a single Eurocard CompactPCI® Ethernet controller; that needs only one slot on the CompactPCI® bus.

It supports leading high-performance Real-Time Ethernet protocol standards, with transmission speeds of up to 100MBit/s. Protocol configuration for PROFINET, EtherCAT, Ethernet PowerLink, EtherNet/IP, OpenModbus, sercos and VARAN is done by loadable firmware. The respective physical interfaces are isolated from the system.
The complete protocol stack is executed on the F752, and data exchange to the host is done via Dual-Port-Memory or DMA.

The F752 is based on the netX SOC. This highly integrated network controller supports parallel data transmission via several data paths between the internal CPU and graphics engines, and the communication and host controllers. The netX SOC also controls the on-board memory and other peripheral interfaces such as UARTS, USB, SPI or I²C.
Communication works via a dual-port SRAM interface and is supported by window and pointer access mechanism. Interrupts are available in both directions from F752 to host and from host to F752.
The F752 supports a wide range of operating systems including Windows®, Windows® CE, Linux and VxWorks®.
The F752 has been designed for mission-critical industrial and for mobile applications with demand for high resistance regarding temperature, shock and vibration

Diagram


F
2 x RJ45
Real-Time-Ethernet
EtherCAT
EtherNet/IP
Modbus
POWERLINK
PROFINET
sercos
the automation bus
VARAN
F
Mini USB
netx
100
Dual-Port-Memory
Or
Direct Memory Access
Security
Memory
SDRAM
J1
B
F Front
B Onboard

Technical Data

Ethernet	■ Supported communication determined by firmware: □ EtherCAT Master, EtherCAT Slave □ EtherNet/IP Scanner (Master), EtherNet/IP Adapter (Slave) □ Open Modbus/TCP □ POWERLINK Controlled Node/Slave □ PROFINET IO-Controller (Master), PROFINET IO-Device (Slave) □ sercos Master, sercos Slave □ VARAN Client (Slave) ■ Ethernet frame type II ■ Interface □ Transmission Rate: 100 MBit/s, 10 MBit/s (depending on loaded firmware) □ Type: 100 BASE-TX, 10 BASE-T (depending on loaded firmware) □ Isolated □ RJ45 Socket
Communication Controller	■ Hilscher netX 100 SOC
Integrated Memory	■ 8 MB SDRAM ■ 4 MB serial Flash EPROM ■ 64 KB Dual-Port Memory (DPM)
Diagnostic Interface	■ Mini B USB plug (5-pin)
LED Display	■ System status LED ■ LED Communication Status (duo LED)
CompactPCI® Bus	■ Compliant with PICMG 2.0 R2.1 ■ 32-bit/33-MHz bridge ■ DPM or DMA data access
Electrical Specifications	■ Supply voltage/maximum current □ +3.3 V DC ±5% / 650 mA ■ Connected via CompactPCI® Bus
Mechanical Specifications	■ Dimensions (L x W x H): 162.2 x 100 x 20 mm ■ CompactPCI® slot (3.3 V) ■ Weight: 136 g
Environmental Conditions	■ Temperature range (operation): 0..+70°C ■ Temperature range (storage): 0..+70°C ■ Relative humidity: max. 95% non-condensing
CE Conformity	■ EN 55011:2009 + A1:2010, CISPR 11:2009, Class A (radio disturbance) ■ EN 61000-4-2:2009 (electrostatic discharge) ■ EN 61000-4-3:2006 + A1:2008 + A2:2010 (radiated, radio-frequency, electromagnetic field immunity) ■ EN 61000-4-4:2004 + A1:2010 (burst electrical fast transients/burst) ■ EN 61000-4-5:2006 (surge) ■ EN 61000-4-6:2009 (to conducted disturbances, induced by radio- frequency fields) ■ EN 61000-4-8:2010 (power frequency magnetic field) ■ EN 61000-6-2:2005 + B1:2011 (for industrial environments)
Certification	■ The device is certified according to UL 508 □ UL-File-Nr. E221530
Operating Systems	■ Windows® ■ Windows® CE ■ Linux ■ VxWorks® ■ QNX®

Technical Data

Software and Drivers	■ Configuration software master and slave: □ SYCON.net ■ Configuration software slave: □ netX Configuration Tool ■ For more information regarding drivers and software see: □ Complete list of all drivers and software available from Hilscher directly
Support and Downloads	■ For more information on supported operating system versions and drivers see Downloads.

Ordering Information

Standard F752 Models	**02F752-00**	1 Real-Time-Ethernet Slave interface, supports Ethercat, Modbus, Powerlink, Profinet, Sercos, Varan, 0..+70°C screened
	02F752-01	1 Real-Time-Ethernet Master interface, supports Ethercat, Modbus, Powerlink, Profinet, Sercos, Varan, 0..+70°C screened
Related Hardware	This board can only be ordered together with one of the complete systems available from MEN.	
Software: Linux	This product is designed to work under Linux. See below for all available separate software packages.	
	13F750-90	Linux driver (Hilscher netX) for CANopen, PROFIBUS, DeviceNET, EtherNET/IP, EtherCat, PROFINET, OpenModBus, Sercos, Varan for F750, F751, F752, F753, PX50, PX51, PX52 and PX53.
Software: Windows®	This product is designed to work under Windows®. See below for all available separate software packages. Windows® and Windows® CE software for Hilscher boards, as well as firmware and additional documentation can be downloaded directly from the following links: Hilscher Software and Hilscher Support and Downloads	
Software: VxWorks®	This product is designed to work under VxWorks®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	13F750-60	VxWorks® 5.4 / 6.2 driver (Hilscher netX) for CANopen, PROFIBUS, DeviceNET, EtherNET/IP, EtherCat, PROFINET, OpenModBus, Sercos, Varan for F750, F751, F752, F753, PX50, PX51, PX52 and PX53.
Software: QNX®	This product is designed to work under QNX®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets.	
	13F750-40	QNX® 6.4/6.5 driver (Hilscher netX) for CANopen, PROFIBUS, DeviceNET, EtherNET/IP, EtherCat, PROFINET, OpenModBus, Sercos, Varan for F750, F751, F752, F753, PX50, PX51, PX52 and PX53.
Software: Miscellaneous	A large range of corresponding driver software, software updates, firmware and firmware updates, as well as additional technical documentation is available at www.hilscher.com. A complete selection of drivers and software is available from Hilscher directly. For more information, please see: EtherCAT Master EtherCAT Slave EtherNet/IP Scanner (Master) EtherNet/IP Adapter (Slave) Open Modbus/TCP POWERLINK Controlled Node (Slave) PROFINET IO-Controller (Master) PROFINET IO-Device (Slave) sercos (Master) sercos (Slave) VARAN Client (Slave)	

For operating systems not mentioned here contact MEN sales.

Documentation	Compare Chart 3U CompactPCI® / PlusIO peripheral cards » Download	
	20F750-00	User Manual for Hilscher cards F750, F751, F752, F753 as well as PX50, PX51, PX52 and PX53

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