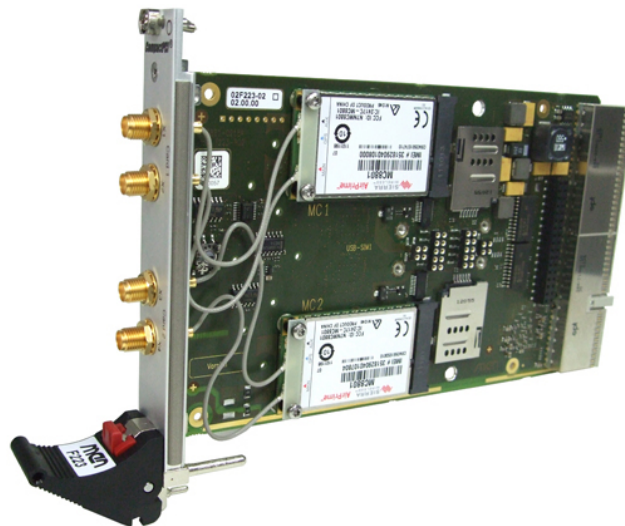


F223 – 3U CompactPCI® PCIe® Mini Card Carrier for Wireless Functions

- 2 PCI Express® Mini Cards (full-/half-size)
- For wireless applications (WLAN/WAP, UMTS, GPS, GSM, HSDPA, LTE)
- 2 or 3 external antennas per module (reverse SMA)
- Up to 18 SIM card slots
- For cards with internal PCI Express® and USB interface
- -40 to +85°C screened, conformal coating
- 4 HP 32-bit/33-MHz CompactPCI®



The F223 is a rugged single Eurocard CompactPCI® carrier board supporting the PCI Express® Mini Card standard.

The standard version of the F223 offers two PCI Express® Mini Card slots with USB and PCI Express® connection. It allows to use all types of cards for wireless applications making it possible to extend the functionality of a CompactPCI® system in the same fast and easy way as a common notebook.

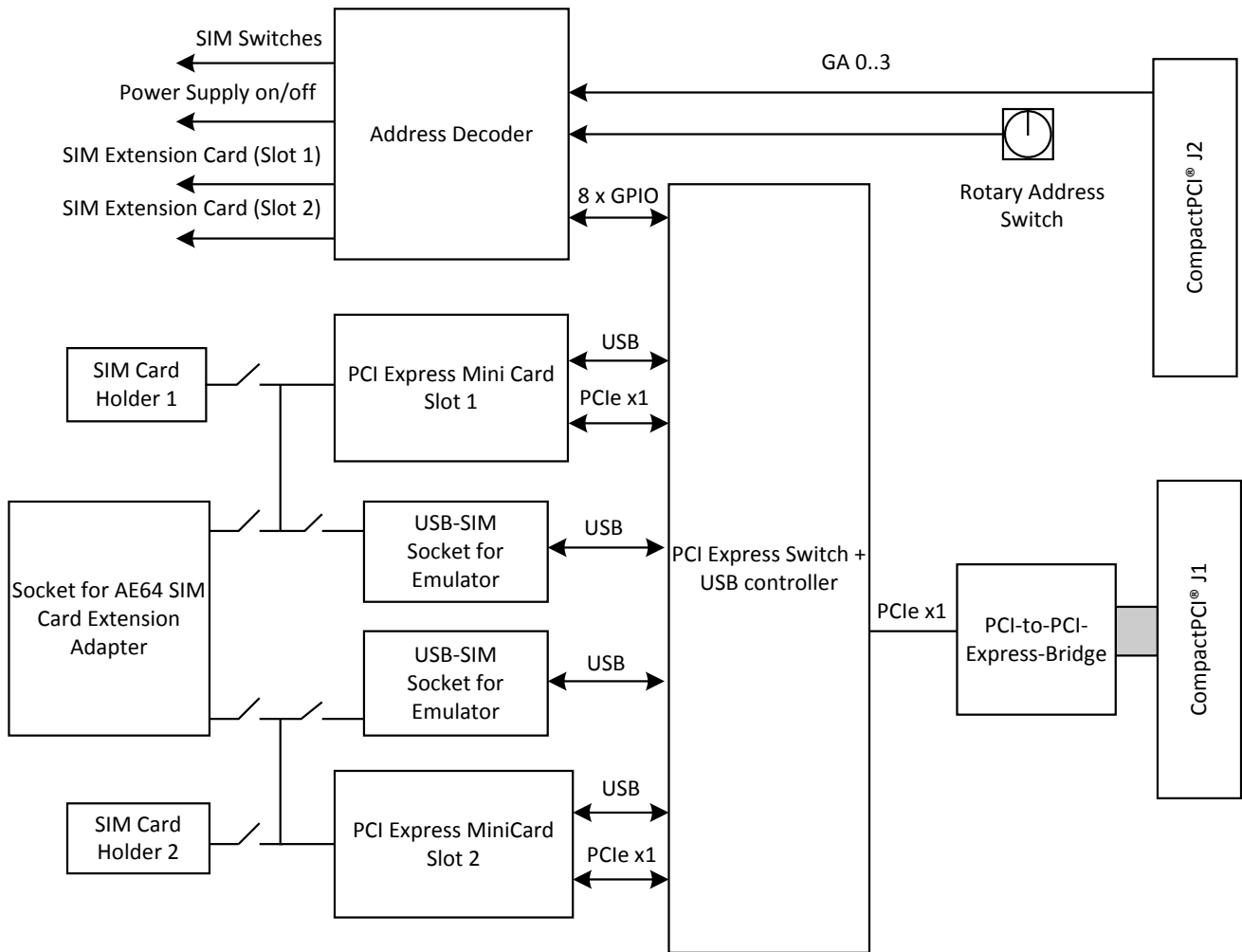
Each PCI Express® Mini Card is connected to two or three robust redundant external SMA antenna connectors at the front panel of the F223. It is possible

to reset and power on and off the two PCI Express® Mini Cards separately without having to reset the whole system.

Using a plug-on adapter board as much as eight additional SIM cards per PCI Express® card can be implemented. Even with the adapter assembled the board still only needs a width of 4HP. Another option is to equip the board with a USB-SIM emulator for controlling SIM cards on a central server.

The F223 is designed for -40 to +85°C operating temperature using qualified components and conformally coated in order to be used also in harsh and mobile environments. The final environmental qualification depends on the respective cards used on the carrier.

Diagram



Technical Data

Card Interfaces	<ul style="list-style-type: none"> ■ For two PCI Express® Mini Cards <ul style="list-style-type: none"> □ With two SIM card holders (one for each PCI Express® Mini Card) ■ PCI Express® and USB interface ■ Individual reset and power on/off for each PCI Express® Mini Card <ul style="list-style-type: none"> □ Via GPIO lines of the PCI Express®/USB controller ■ Up to 16 additional SIM cards on a special adapter board ■ USB-SIM socket for SIM emulator ■ Please note that MEN does not offer SIM cards or mobile telephony contracts!
Front Connections	<ul style="list-style-type: none"> ■ Up to six Reverse SMA antenna connectors (front panel available as an accessory)
CompactPCI® Bus	<ul style="list-style-type: none"> ■ Compliance with CompactPCI® Core Specification PICMG 2.0 R3.0 ■ Peripheral slot ■ 32-bit/33-MHz PCI-to-PCI Express® bridge ■ V(I/O): +3.3V (+5V tolerant) ■ J2 connector with geographical addressing for distinguishing boards in a system with several boards
Electrical Specifications	<ul style="list-style-type: none"> ■ Supply voltage/power consumption: <ul style="list-style-type: none"> □ +5V (-3%/+5%), depending on plugged card, 1.1 A without PCI Express® Mini Cards □ +3.3V and 1.5V supply voltage for cards generated onboard
Mechanical Specifications	<ul style="list-style-type: none"> ■ Dimensions: conforming to CompactPCI® specification for 3U boards ■ Front panel: 4HP front panel with four SMA connectors available as an accessory ■ Weight: <ul style="list-style-type: none"> □ 198 g (with front panel and PCI Express® Mini cards) □ 104 g (without front panel and PCI Express® Mini cards)
Environmental Specifications	<ul style="list-style-type: none"> ■ Temperature range (operation): <ul style="list-style-type: none"> □ -40..+85°C (screened, only carrier, depending on configuration) □ Airflow: min. 1.0 m/s ■ Temperature range (storage): -40..+85°C ■ Relative humidity (operation): max. 95% non-condensing ■ Relative humidity (storage): max. 95% non-condensing ■ Altitude: -300 m to + 3,000 m ■ Shock: 50 m/s², 30 ms (EN 61373) ■ Vibration (function): 1 m/s², 5 Hz - 150 Hz (EN 61373) ■ Vibration (lifetime): 7.9 m/s², 5 Hz - 150 Hz (EN 61373) ■ Conformal coating
MTBF	<ul style="list-style-type: none"> ■ 1,224,236 h @ 40°C according to IEC/TR 62380 (RDF 2000)
Safety	<ul style="list-style-type: none"> ■ Flammability <ul style="list-style-type: none"> □ PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers ■ Electrical Safety <ul style="list-style-type: none"> □ Insulation measurement test according to EN 50155 (12.2.9.1) (railway) □ Voltage withstand test according to EN 50155 (12.2.9.2) (railway) □ Information technology equipment test according to EN 60950 (information technology equipment) □ Voltage withstand test according to EN 50124-1 (Annex B) (signal- and telecommunication equipment)
EMC Conformity	<ul style="list-style-type: none"> ■ EN 55022 (radio and conducted disturbance) ■ IEC 61000-4-2 (ESD) ■ IEC 61000-4-3 (electromagnetic field immunity) ■ IEC 61000-4-4 (burst) ■ IEC 61000-4-5 (surge) ■ IEC 61000-4-6 (conducted disturbances)
Software Support	<ul style="list-style-type: none"> ■ MEN Driver Interface System (MDIS™ for all supported operating systems)

Configuration & Options

Standard Configurations

Article No.	Card Slots	Front Panel	USB Audio	Operating Temperature
02F223-00	2 PCIe MiniCards	4 SMA connectors	no	-40..+85°C

Options

Card Slots	<ul style="list-style-type: none"> ■ Up to 22 SIM card holders (eleven for each PCI Express® Mini Card) ■ I2S interface for audio signals (via digital audio I/O streamer) <ul style="list-style-type: none"> □ I2S interface only with special non-standard PCI Express® Mini Card ■ USB-SIM emulator ■ For two PCI Express® Full-Mini or Half-Mini Cards (dual-use sockets)
Front Panel	<ul style="list-style-type: none"> ■ Two or three antennas per PCI Express® Mini Card ■ QMA instead of SMA antenna connectors
Cooling Concept	<ul style="list-style-type: none"> ■ Also available with conduction cooling in MEN CCA frame

Please note that some of these options may only be available for large volumes. Please ask our sales staff for more information.

Ordering Information

Standard F223 Models	02F223-00	2 PCI Express® MiniCard slots (USB and PCI Express® support), 2 SIM card holders, SIM expansion socket, -40..+85°C screened (carrier only), conformal coating (front panel to be ordered separately)
Related Hardware	15PX01-00	GLONASS & GPS PCI Express® MiniCard (full size), 3-axis Gyro sensor, -40..+85°C with qualified components
Miscellaneous Accessories	0714-0015	Front panel, 4HP, with 4 SMA reverse connectors, -40..+85°C screened
	0714-0016	Front panel, 4HP, with 6 SMA reverse connectors, -40..+85°C screened
	0714-0017	Front panel 4HP, with 4x QMA reverse connectors, -40..+85°C
	08AE64-00	SIM card expansion board with 2x 8 SIM card slots, -40..+85° screened, conformal coating
Software: Linux	This product is designed to work under Linux. See below for potentially available separate software packages from MEN.	
	13P7C9-06	MDIS5™ low level driver sources (MEN) for F223
Software: Windows®	This product is designed to work under Windows®. See below for potentially available separate software packages from MEN.	
	13P7C9-70	MDIS5™ Windows® driver (MEN) for F223

For operating systems not mentioned here [contact MEN sales](#).

Documentation	Compare Chart 3U CompactPCI® / PlusIO CPU cards » Download	
	Compare Chart 3U CompactPCI® / PlusIO peripheral cards » Download	
	20F223-00	F223 User Manual

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