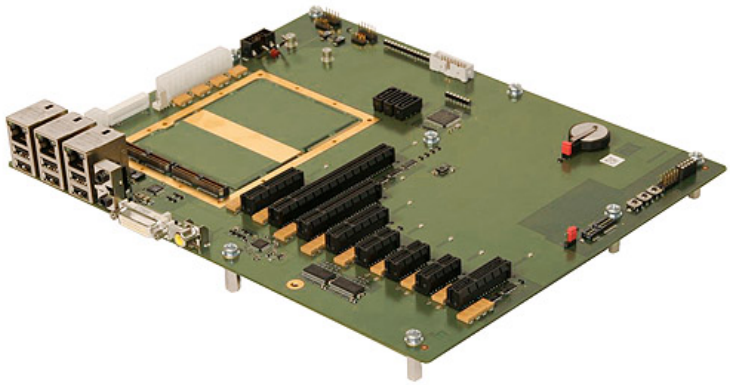
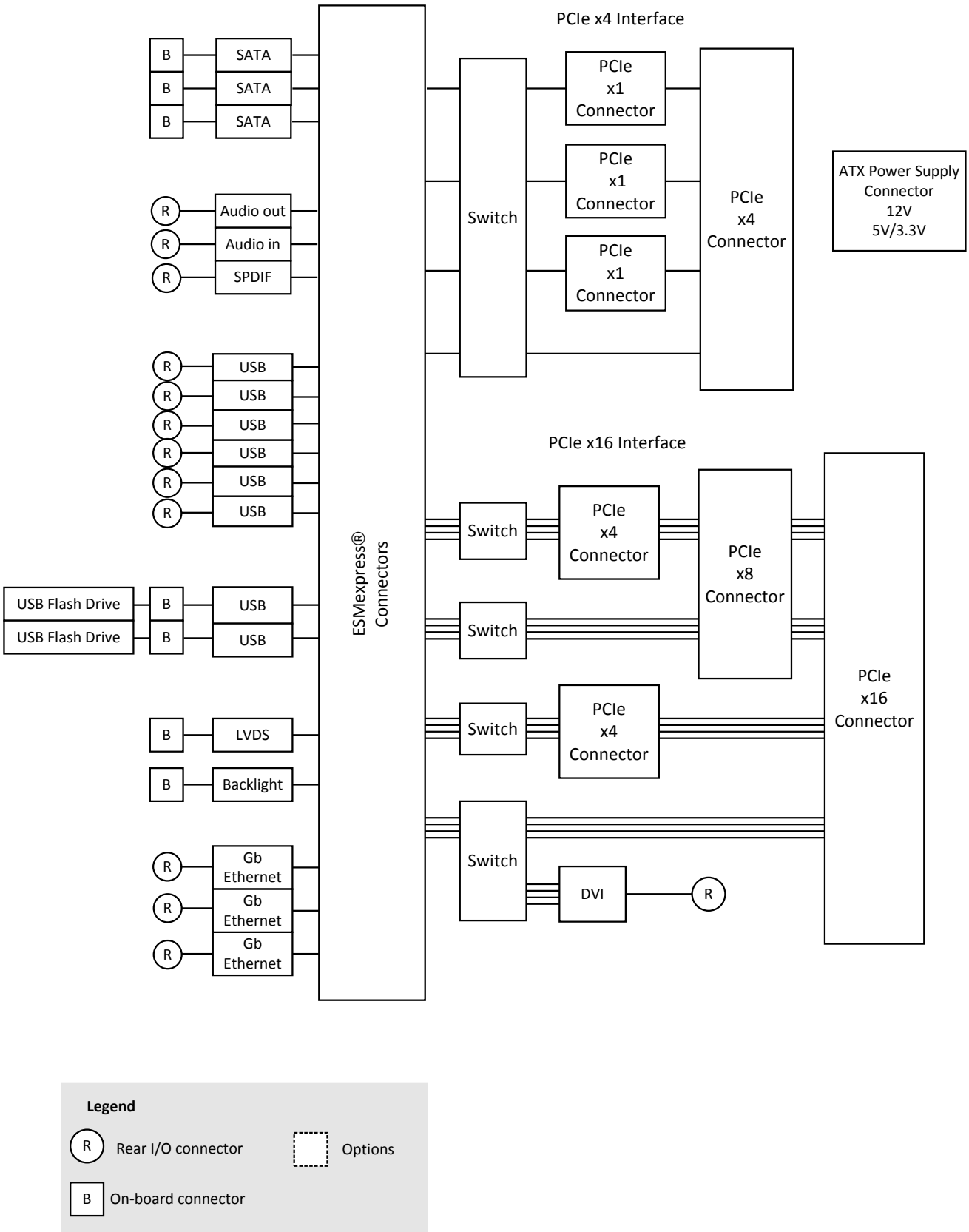
XC1 – ESMexpress® COM Evaluation Carrier Board

- **ATX form factor**
- **1 ESMexpress® slot**
- **8 PCI Express® connectors**
- **4 GB USB Flash**
- **3 SATA**
- **LVDS, DVI**
- **HD audio**
- **3 Gb Ethernet**
- **6 USB 2.0**



ESMexpress® is a Computer-On-Module which together with an application-specific carrier board forms a semi-custom solution for industrial, harsh, mobile and mission-critical environments.
The XC1 is an evaluation and development platform that can be used together with any type of ESMexpress® module. Thus, the XC1 provides physical interfaces and connectors for nearly all of the modern serial standard I/Os routable from the ESMexpress® connectors to the carrier board. The XC1 comes with one ESMexpress® slot and eight additional PCI Express® card slots. The functionality of all connectors depends on the ESMexpress® module used on the XC1. It supports standard ATX form factor and can therefore operate in a PC system. Additional 4 GB of USB-driven Flash disk for application storage complement the memory configuration that is already available on the different ESMexpress® modules.
For a first evaluation of the functions and performance of the ESMexpress® module of choice we strongly recommend to use the XC1. Further useful accessories include an external PSU and an ESMexpress® to COM Express® adapter.

Diagram


PCIe x4 Interface
B
SATA
B
SATA
B
SATA
R
Audio out
R
Audio in
R
SPDIF
R
USB
R
USB
R
USB
R
USB
R
USB
R
USB
USB Flash Drive
USB Flash Drive
B
USB
B
USB
B
LVDS
B
Backlight
R
Gb Ethernet
R
Gb Ethernet
R
Gb Ethernet
ESMexpress® Connectors
Switch
PCIe x1 Connector
PCIe x1 Connector
PCIe x1 Connector
PCIe x4 Connector
ATX Power Supply Connector 12V 5V/3.3V
PCIe x16 Interface
Switch
PCIe x4 Connector
Switch
PCIe x8 Connector
Switch
PCIe x4 Connector
Switch
DVI
R
PCIe x16 Connector
Legend
R
Rear I/O connector
Options
B
On-board connector

Technical Data

ESMexpress® Carrier Card	■ One ESMexpress® slot ■ J1 and J2 assembled
Memory	■ Three SATA connectors ■ Two 2GB USB Flash disks included in the delivery
Graphics	■ One DVI rear connector ■ One LVDS ZIF connector □ For direct connection of an LVDS display ■ One LVDS backlight 10-pin connector ■ SDVO via PCI Express® connector
Rear I/O	■ USB 2.0 □ 6 Series A connectors via rear I/O □ 2 onboard connectors ■ 10/100/1000Base-T Ethernet □ Three interfaces on RJ45 connectors ■ Audio □ Audio in □ Audio out □ SPDIF out
PCI Express®	■ Three PCIe® x1 connectors ■ Three PCIe® x4 connectors (two if the board is built into a standard ATX housing) ■ One PCIe® x8 connector ■ One PCIe® x16 connector ■ Possible configurations of PCIe® interface B selected by user switches □ 1 x PCIe® x16 □ 2 x PCIe® x8 □ 4 x PCIe® x4 □ Onboard LED to signal active configuration ■ Possible configurations of PCIe® interface A selected by user switches □ 1 x PCIe® x4 □ 4 x PCIe® x1 □ Onboard LED to signal active configuration
Miscellaneous	■ Battery holder ■ Power on button ■ Reset button ■ One GPIO line
Electrical Specifications	■ Supply voltage/power consumption: □ ATX standard power supply via 24-pin connector □ 12V supply for PCIe® connectors via additional 4-pin connector ■ MTBF: 335,165h @ 40°C according to IEC/TR 62380 (RDF 2000)
Mechanical Specifications	■ Dimensions: 305mm x 255mm (conforming to ATX standard) ■ Weight: 495g (without ESMexpress® module)
Environmental Specifications	■ Temperature range (operation): □ 0..+60°C (screened) □ Airflow depending on ESMexpress® module ■ Temperature range (storage): -40..+85°C ■ Relative humidity (operation): max. 95% non-condensing ■ Relative humidity (storage): max. 95% non-condensing ■ Altitude: -300m to + 2,000m ■ Bump: 10g/16ms ■ Conformal coating on request
Safety	■ PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers

Ordering Information

Standard XC1 Models	**08XC01-00**	Evaluation and development board for all ESMexpress® modules (coming with top cover and frame), 0..+60°C, incl. faceplate, 4 GB USB Flash Disk and USB cable type A to A
Related Hardware	**15XM01L00**	Intel® Atom™ Z530P, 1.6 GHz, 1 GB DDR2 RAM, 1 Gb Ethernet, 1x PCIe®, with cover, -50..+85°C Tcase screened
	15XM01L02	Intel® Atom™ Z510P, 1.1 GHz, 512 MB DDR2 RAM, 1 Gb Ethernet, 1x PCIe®, no J2, no cover, -50..+85°C Tcase screened
	15XM02-00	Intel® Core™ 2 Duo SP9300 2.26 GHz, 2GB DDR3, 0..+85°C Tcase
	15XM02-01	Intel® Celeron® M M722 1.2GHz, 2GB DDR3, 0..+85°C Tcase
	15XM50-00	MPC8548 / 1.33 GHz, 512 MB DDR2 DRAM, 2 MB SRAM, 128 KB FRAM, -50..+85°C screened
	15XM51-00	P4080 (8 cores), 1.2 GHz, 2 GB DDR3 SDRAM, 64 MB Flash, 128 KB FRAM, 2 Gb Ethernet, 2 PCIe® x1, 4 USB 2.0 host ports, 1 USB client port, with frame and cover, -50..+85°C (qualified components)
Miscellaneous Accessories	**0712-0019**	Standard ATX PSU, 350 W, 0..+40°C
	08AE12-00	ESMexpress® module to COM Express® carrier adapter, 0..+60°C

For operating systems not mentioned here contact MEN sales.

Documentation	**20APPN004**	Application Note: How to make a USB stick bootable
	20XC01-ER	XC1 Errata
	20XC01-00	XC1 User Manual

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