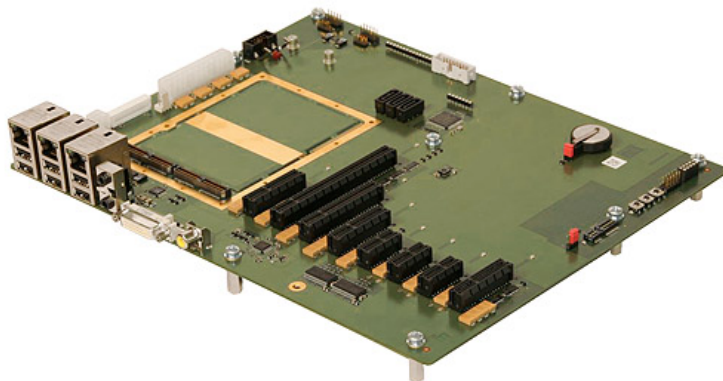


# XC1 – ESMexpress® COM Evaluation Carrier Board

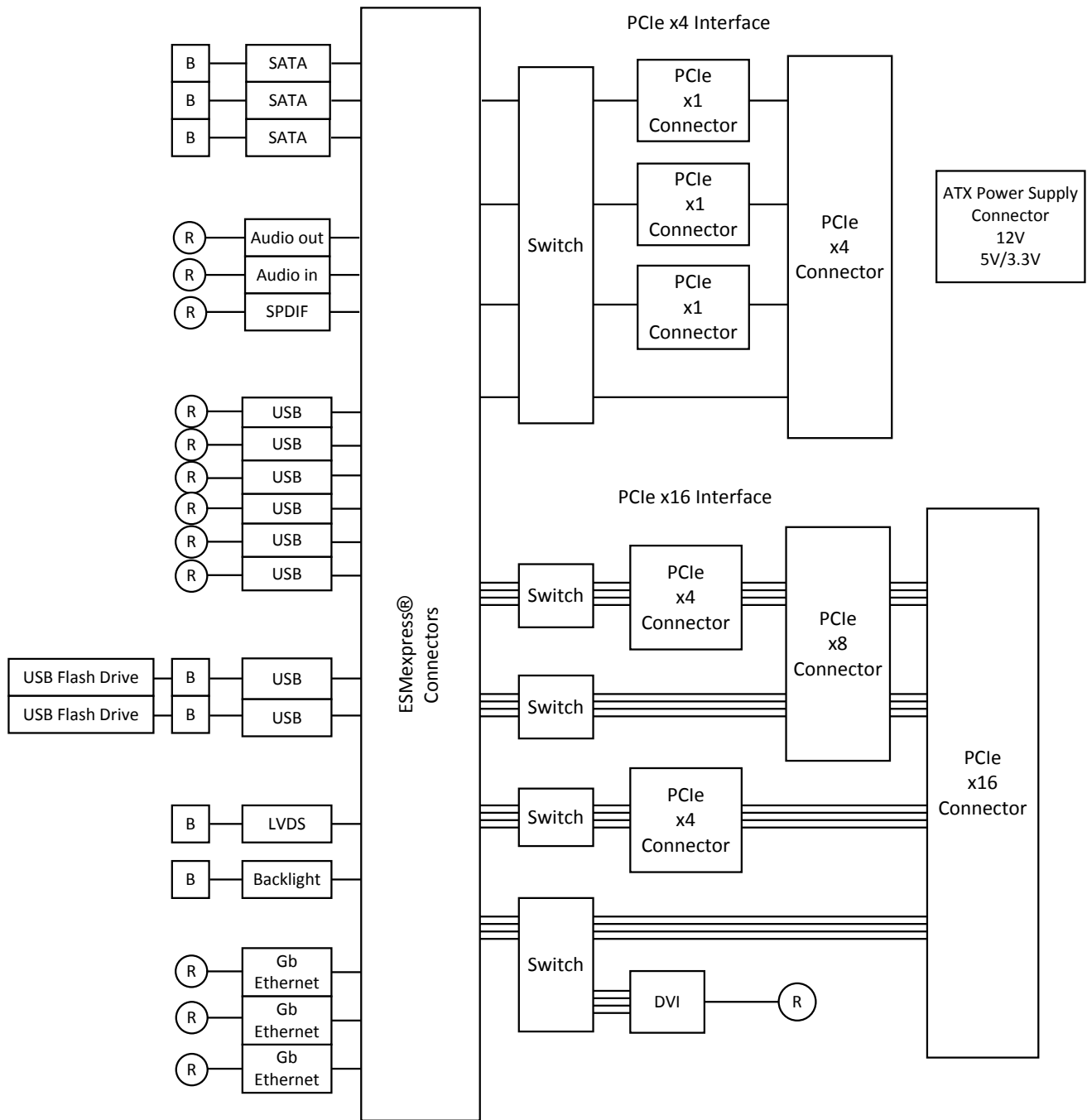
- **ATX form factor**
- **1 ESMexpress® slot**
- **8 PCI Express® connectors**
- **4 GB USB Flash**
- **3 SATA**
- **LVDS, DVI**
- **HD audio**
- **3 Gb Ethernet**
- **6 USB 2.0**



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



**Legend**

(R) Rear I/O connector      [ ] Options

(B) On-board connector

## Technical Data

<b>ESMexpress® Carrier Card</b>	<ul style="list-style-type: none"> <li>■ One ESMexpress® slot</li> <li>■ J1 and J2 assembled</li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>■ Three SATA connectors</li> <li>■ Two 2GB USB Flash disks included in the delivery</li> </ul>
<b>Graphics</b>	<ul style="list-style-type: none"> <li>■ One DVI rear connector</li> <li>■ One LVDS ZIF connector <ul style="list-style-type: none"> <li>□ For direct connection of an LVDS display</li> </ul> </li> <li>■ One LVDS backlight 10-pin connector</li> <li>■ SDVO via PCI Express® connector</li> </ul>
<b>Rear I/O</b>	<ul style="list-style-type: none"> <li>■ USB 2.0 <ul style="list-style-type: none"> <li>□ 6 Series A connectors via rear I/O</li> <li>□ 2 onboard connectors</li> </ul> </li> <li>■ 10/100/1000Base-T Ethernet <ul style="list-style-type: none"> <li>□ Three interfaces on RJ45 connectors</li> </ul> </li> <li>■ Audio <ul style="list-style-type: none"> <li>□ Audio in</li> <li>□ Audio out</li> <li>□ SPDIF out</li> </ul> </li> </ul>
<b>PCI Express®</b>	<ul style="list-style-type: none"> <li>■ Three PCIe® x1 connectors</li> <li>■ Three PCIe® x4 connectors (two if the board is built into a standard ATX housing)</li> <li>■ One PCIe® x8 connector</li> <li>■ One PCIe® x16 connector</li> <li>■ Possible configurations of PCIe® interface B selected by user switches <ul style="list-style-type: none"> <li>□ 1 x PCIe® x16</li> <li>□ 2 x PCIe® x8</li> <li>□ 4 x PCIe® x4</li> <li>□ Onboard LED to signal active configuration</li> </ul> </li> <li>■ Possible configurations of PCIe® interface A selected by user switches <ul style="list-style-type: none"> <li>□ 1 x PCIe® x4</li> <li>□ 4 x PCIe® x1</li> <li>□ Onboard LED to signal active configuration</li> </ul> </li> </ul>
<b>Miscellaneous</b>	<ul style="list-style-type: none"> <li>■ Battery holder</li> <li>■ Power on button</li> <li>■ Reset button</li> <li>■ One GPIO line</li> </ul>
<b>Electrical Specifications</b>	<ul style="list-style-type: none"> <li>■ Supply voltage/power consumption: <ul style="list-style-type: none"> <li>□ ATX standard power supply via 24-pin connector</li> <li>□ 12V supply for PCIe® connectors via additional 4-pin connector</li> </ul> </li> <li>■ MTBF: 335,165h @ 40°C according to IEC/TR 62380 (RDF 2000)</li> </ul>
<b>Mechanical Specifications</b>	<ul style="list-style-type: none"> <li>■ Dimensions: 305mm x 255mm (conforming to ATX standard)</li> <li>■ Weight: 495g (without ESMexpress® module)</li> </ul>
<b>Environmental Specifications</b>	<ul style="list-style-type: none"> <li>■ Temperature range (operation): <ul style="list-style-type: none"> <li>□ 0..+60°C (screened)</li> <li>□ Airflow depending on ESMexpress® module</li> </ul> </li> <li>■ Temperature range (storage): -40..+85°C</li> <li>■ Relative humidity (operation): max. 95% non-condensing</li> <li>■ Relative humidity (storage): max. 95% non-condensing</li> <li>■ Altitude: -300m to + 2,000m</li> <li>■ Bump: 10g/16ms</li> <li>■ Conformal coating on request</li> </ul>
<b>Safety</b>	<ul style="list-style-type: none"> <li>■ PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers</li> </ul>

## Ordering Information

<b>Standard XC1 Models</b>	<b>08XC01-00</b>	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
<b>Related Hardware</b>	<b>15XM01L00</b>	Intel® Atom™ Z530P, 1.6 GHz, 1 GB DDR2 RAM, 1 Gb Ethernet, 1x PCIe®, with cover, -50..+85°C Tcase screened
	<b>15XM01L02</b>	Intel® Atom™ Z510P, 1.1 GHz, 512 MB DDR2 RAM, 1 Gb Ethernet, 1x PCIe®, no J2, no cover, -50..+85°C Tcase screened
	<b>15XM02-00</b>	Intel® Core™ 2 Duo SP9300 2.26 GHz, 2GB DDR3, 0..+85°C Tcase
	<b>15XM02-01</b>	Intel® Celeron® M M722 1.2GHz, 2GB DDR3, 0..+85°C Tcase
	<b>15XM50-00</b>	MPC8548 / 1.33 GHz, 512 MB DDR2 DRAM, 2 MB SRAM, 128 KB FRAM, -50..+85°C screened
	<b>15XM51-00</b>	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)
<b>Miscellaneous Accessories</b>	<b>0712-0019</b>	Standard ATX PSU, 350 W, 0..+40°C
	<b>08AE12-00</b>	ESMexpress® module to COM Express® carrier adapter, 0..+60°C

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

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

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