# COMX-CORE Series

## COM Express Modules

**Type 6 COM Express modules are designed to provide standard PC processing functionality for high performance applications**

- Intel® Core™ i5 and i7 processors at up to 2.4 GHz

- Intel® Celeron® P4505 processor at 1.86 GHz

- Up to 8GB DDR3 memory, with ECC option

- Gigabit Ethernet, SATA and USB ports

- Dual graphics outputs

- Multiple PCI Express lanes for high speed expansion

The COMX-CORE series of COM Express® modules are based on the new Intel® Core™ i5 and i7 mobile processors for high performance applications. These new processors are especially suitable for embedded applications due to their improved performance/power ratio and small form factor. This Type 6 COM Express module provides state-of-the-art PC functionality and is designed to be plugged onto a custom carrier board to create an application-specific solution. Already widely adopted in the industrial automation and medical markets, this latest COM Express module incorporates new functionality for improved security and management.

The COMX-CORE modules use the latest generation Unified Extensible Firmware Interface (UEFI) BIOS from AMI. This manages the interaction between the low-level hardware interfaces and the OS level in a clean and efficient way that is expected to provide superior reliability, especially considering the flexibility for user I/O and option ROM on custom baseboards.
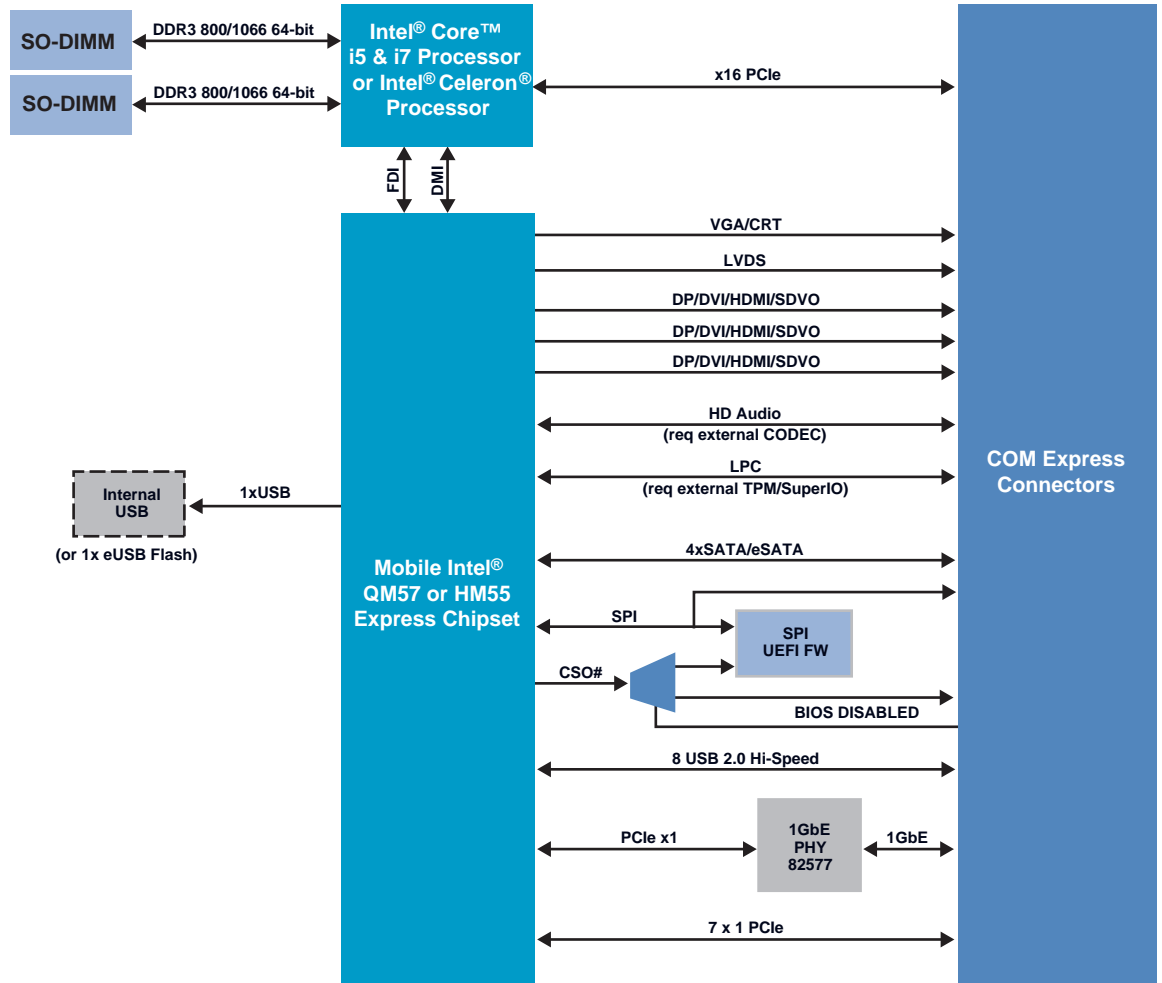
COMX-CORE modules have a wide range of interfaces to connect to standard peripherals directly or to carrier mounted I/O. These include LCD and CRT displays, SATA and USB flash disks, PCI Express devices, USB and Gigabit Ethernet networks. Obviously some of the target applications are in locations not well suited to physical disk support and so in addition to SATA disk support, COMX-CORE modules also have the capability to use and boot from an optional eUSB flash disk, available up to 16Gb capacity.
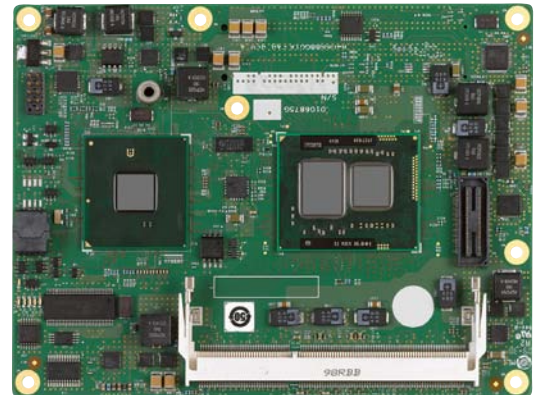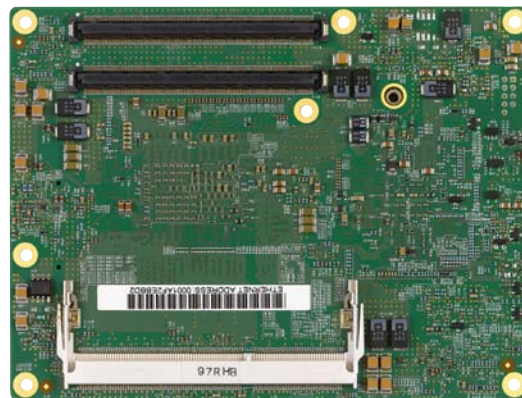


**COM✦Express**®

**EMERSON**™
**Network Power**

## Block Diagram

SO-DIMM

DDR3 800/1066 64-bit

SO-DIMM

DDR3 800/1066 64-bit

Intel® Core™
i5 & i7 Processor
or Intel® Celeron®
Processor

x16 PCIe

FDI

DMI

VGA/CRT

LVDS

DP/DVI/HDMI/SDVO

DP/DVI/HDMI/SDVO

DP/DVI/HDMI/SDVO

HD Audio
(req external CODEC)

LPC
(req external TPM/SuperIO)

COM Express
Connectors

Internal
USB

1xUSB

(or 1x eUSB Flash)

Mobile Intel®
QM57 or HM55
Express Chipset

4xSATA/eSATA

SPI

SPI
UEFI FW

CSO#

BIOS DISABLED

8 USB 2.0 Hi-Speed

PCIe x1

1GbE
PHY
82577

1GbE

7 x 1 PCIe

## Hardware Specifications

### PROCESSOR
- Intel® Core i7 dual-core up to 2.0 GHz
- Intel® Core i5 dual-core up to 2.4 GHz
- Intel® Celeron® P4505 @ 1.86 GHz

### CHIPSET
- Mobile Intel® QM57 Express
- Mobile Intel® HM55 Express

### MEMORY
- Two DDR3 800/1066 64-bit SO-DIMM sockets. Maximum memory capacity is 8GB. Option for ECC memory.

### VIDEO
- 200 MHz graphics engine
- Next-generation graphics core offering superior 3D and video performance
- Includes hardware acceleration for AVC/VC-1/MPEG-2

### BUS EXPANSION
- (7) PCI Express x 1
- (1) PCI Express x 16

### I/O
- (1) Gigabit Ethernet (Intel® 82577)
- (4) SATA
- (8) USB 2.0
- HD Audio (requires external codec)
- LPC for external TPM
- SPI for external BIOS

### COMPLIANCE AND CERTIFICATION INFORMATION
- EMC and Safety
  - Class B (FCC, VCCI, MIC, AS/NZ)
  - UL, CSA, Ctick

## Firmware and Operating System Support

### BIOS
- AMI UEFI BIOS

### OS COMPATIBILITY
- Microsoft® Windows® XP,
- Microsoft Windows Vista®
- Fedora Core 12

## Package Contents
- (1) COM Express Motherboard
- (1) Drivers CD

3

## Ordering Information

| Part Number | Description |
|---|---|
| COMX-CORE-750 | COM Express module with Intel Core i7 processor @ 2.0 GHz |
| COMX-CORE-710 | COM Express module with Intel Core i7 processor @ 1.066 GHz |
| COMX-CORE-512 | COM Express module with Intel Core i5 processor @ 2.4 GHz, supports ECC memory |
| COMX-CORE-510 | COM Express module with Intel Core i5 processor @ 2.4 GHz |
| COMX-CORE-312 | COM Express module with Intel Celeron P4505 processor @ 1.86 GHz, supports ECC memory |
| COMX-CORE-310 | COM Express module with Intel Celeron P4505 processor @ 1.86 GHz |
| Accessories | |
| COMX-CORE-HP | Heat spreading plate |
| COMX-CORE-HTSNK | Active heatsink |
| COMX-CORE-510-KIT | Developers kit containing 510, heatsink, memory and carrier board |

## SOLUTION SERVICES

Emerson Network Power provides a portfolio of solution services optimized to meet your needs throughout the product lifecycle. Design services help speed time-to-market. Deployment services include global 24x7 technical support. Renewal services enable product longevity and technology refresh.

Intel and Core are trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft, Windows and Vista are trademarks of Microsoft Corporation. All other product or service names are the property of their respective owners.

**Emerson Network Power.**
The global leader in enabling
*Business-Critical Continuity™*.

- ■ AC Power
- ■ Connectivity
- ■ DC Power
- ■ **Embedded Computing**

- ■ Embedded Power
- ■ Infrastructure Management & Monitoring
- ■ Outside Plant
- ■ Power Switching & Controls

- ■ Precision Cooling
- ■ Racks & Integrated Cabinets
- ■ Services
- ■ Surge Protection

**Emerson Network Power**

**Offices:** Tempe, AZ U.S.A. 1 800 759 1107 or +1 602 438 5720
Paris, France +33 1 60 92 31 20 • Munich, Germany +44 1509 236490 • Tel Aviv, Israel +972 9 9560361
Hong Kong +852 2176 3540 • Shanghai, China +86 21 3395 0289 • Tokyo, Japan +81 3 5403 2730 • Seoul, Korea +82 2 3483 1500

**EmersonNetworkPower.com/EmbeddedComputing**

Emerson, Business-Critical Continuity and Emerson Network Power are trademarks of Emerson Electric Co. or one of its affiliated companies. ©2011 Emerson Electric Co.

COMXCORE-D4  02/11