

# COMX-P40x0- ENP2 Modules

Ruggedized QorIQ™ Modules

Embedded Computing for  
Business-Critical Continuity™

PRELIMINARY DATA SHEET

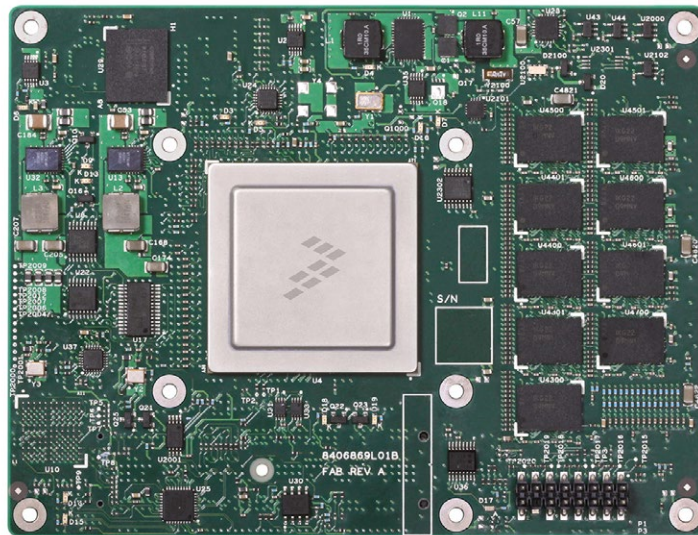
**Ruggedized and extended  
temperature COM Express®  
modules with Freescale  
QorIQ processing power**

- Freescale QorIQ P4040 or P4080 processor at 1.2GHz
- 2 or 4 GB of soldered-down DDR3-1333 ECC memory
- 95 mm x 125 mm COM Express Basic footprint
- -40 °C to +71 °C operating temperature range
- Shock and vibration hardened
- 16 configurable SERDES lanes available for maximum flexibility

The COMX-P40x0-ENP2 modules from Emerson Network Power provide the performance and features of the Freescale QorIQ™ processors on ready-to-go pluggable mezzanine modules that is suitable for use in extended temperature, rugged environments. By incorporating and leveraging the mechanical features and dimensions of the COM Express® specification, the COMX-P40x0-ENP2 modules exhibit all the best attributes of the COM Express open standard enabling shorter development schedules and faster time-to-market. Emerson has a range of QorIQ based COM Express form factor modules to enable scalable product strategies with multiple performance levels.

The COMX-P40x0-ENP2 modules are 95 mm x 125 mm which enable them to fit within a very wide range of enclosures when mounted on a customer carrier. COMX-P40x0-ENP2 modules are off-the-shelf processor solutions that isolate you from the complexities of high speed processor and memory system design, allowing you to concentrate on your carrier and application, lowering risk and improving your development schedules.

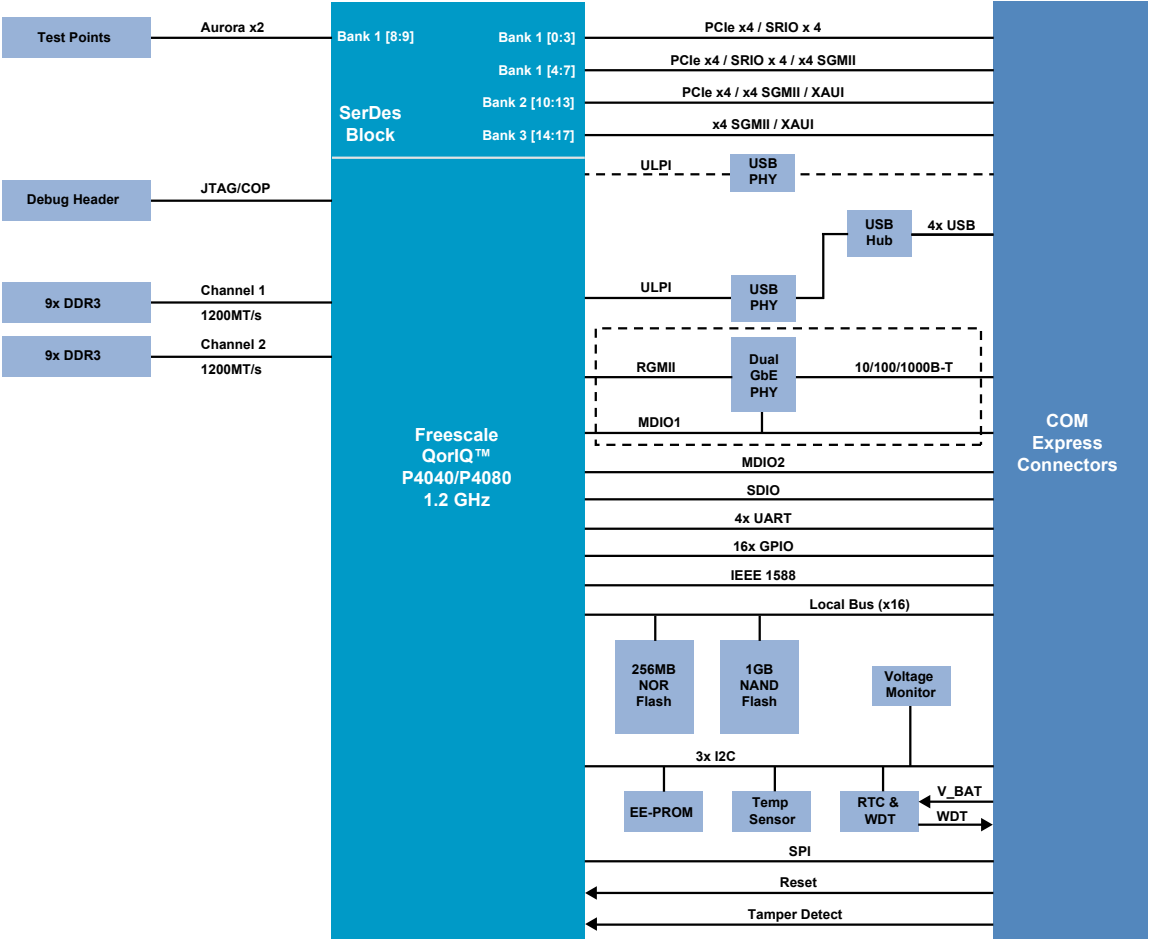
By combining the tried and tested Power Architecture processor cores along with a considerable range of on-module I/O, the COMX-P40x0-ENP2 series is suitable for a range of applications including 4G base-station controllers, in flight entertainment, transport control and signaling, vehicle instrumentation and other applications that need high performance, low latency control in a rugged package.



COM Express®

  
**EMERSON**  
Network Power

COMX-P4040 & COMX-P4080 Block Diagram



## Hardware Specifications

### PROCESSOR

- Freescale QorIQ P4080, eight cores running at 1.2 GHz
- Freescale QorIQ P4040, four cores running at 1.2 GHz

### FORM FACTOR

- 95 mm x 125 mm COM Express Basic size module

### BOOTLOADER

- U-boot

### MEMORY

- 2GB or 4GB soldered-down DDR3-1333 ECC memory

### ON-BOARD STORAGE

- 256MB NOR flash
- 1GB NAND flash
- 2kbit I<sup>2</sup>C user EEPROM

### ON-BOARD I/O

- JTAG Debug

### I/O TO THE CARRIER

16 configurable SERDES lanes available for maximum flexibility in customer platform design. Available interfaces include:

- Up to two (2) 10 GbE XAUI – 3.125Gbps
- Up to six (6) 1 GbE SGMII – 1.25Gbps
- Up to two (2) PCI Express x4 – 2.5 or 5Gbps
- Up to two (2) SRIO x4 – 2.5 or 3.125Gbps

### OTHER I/O AT THE CONNECTOR

- Four (4) UART ports
- Up to one (1) Gigabit Ethernet interface (10/100/1000Base-T)
- Two (2) MDIO
- Sixteen (16) general purpose I/O (GPIO) ports
- Three (3) I<sup>2</sup>C bus
- Five (5) IRQ interrupts
- Four (4) or five (5) USB 2.0 ports
- IEEE 1588 control
- Tamper detection
- Real-time clock
- Watchdog timer
- SPI Bus with four (4) chip selects
- 16-bit Enhanced Local Bus
- One (1) SDIO port

### ACCESSORIES

- Heatsink, heat spreading plate, development carrier

### ENVIRONMENTAL

- -40 °C to +71 °C operating temperature range

### VIBRATION

- Sine: 5G (15 to 2000Hz), 10 minutes per axis
- Random: .04g<sup>2</sup>/Hz (15 to 2000Hz), 1 hour per axis. The profile shall be flat across 15-1000Hz, -6db/octave across 1000Hz - 2000Hz
- Operating shock: 30g for 11ms duration (saw tooth), 3 shocks per axis.

### COMPLIANCE AND CERTIFICATION INFORMATION

- RoHS 6/6
- UL/CSA 60950-1, EN55022, FCC Class B

## Firmware and Operating System Support

- uBoot
- Linux 2.6.34 BSP
- Other BSPs available directly from ecosystem partners including Green Hills, ENEA, Wind River and Mentor Embedded

Ordering Information	
Product	Description
COMX-P4040-4G-ENP2	P4040 extended temp module, 4 GB RAM (4x USB + 1x GbE)
COMX-P4080-2G-ENP2	P4080 extended temp module, 2 GB RAM (5x USB, no GbE)
COMX-P4080-4G-E-ENP2	P4080 extended temp module, 4 GB RAM (4x USB + 1x GbE)
COMX-P4000-ENP-HTSNK	COMX-P40x0-ENP2 active heatsink
COMX-CAR-P1	Carrier card for development













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