COP8.COM

Internet and Networking Solutions for COP8 Microcontrollers

Connect any COP8, any place, any time!

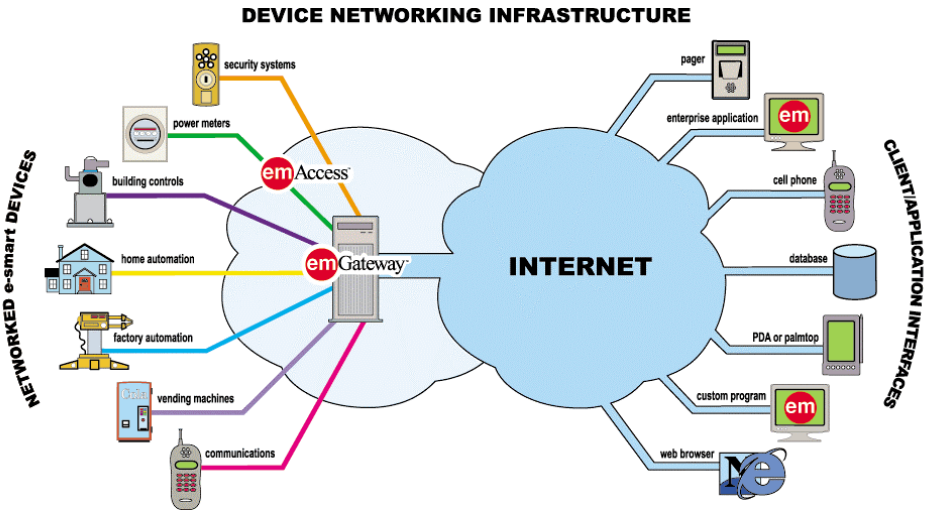
As we enter the post-PC age, two trends are becoming evident: First, networking and the Internet in particular are creating a more connected society and are increasing our ability to access information. In addition, embedded systems are bringing us better household appliances, security and metering systems, and other devices. These two trends are converging as we extend the Internet to tap the information from our intelligent devices, making them e-smart. These e-smart devices will improve the efficiency of our businesses and empower our lives.

National Semiconductor has teamed with emWare to create COP8.COM, a network-enabling solution for the COP8 microcontroller using emWare's EMIT Internet and device networking technology. National's new reference application kit, COP8-REF-COM1, demonstrates the power of device networking and the simplicity of networking COP8-based devices using the EMIT software architecture.

The kit contains a small COP8 reference board programmed with an EMIT embedded object server and application to demonstrate the power of device networking. The board and its application can be accessed and controlled with a Web browser using standard Internet protocols through emGateway. emGateway provides a bridge between TCP/IP networks and lightweight device networks like RS232 and RS485.

COP8.COM makes devices Internet accessible

The COP8 microcontroller is famous for its uses in household appliances, security and metering systems, remote control applications, automotive, and personal devices such as cell phones and smart keys. With COP8.COM and EMIT all of these products can be inexpensively network-enabled to extend the power of Internet connectivity—enhancing COP8 capabilities by responding to and generating information.



COP8-REF-COM1 Kit Highlights

The COP8-REF-COM1 Kit is now available from National Semiconductor's online store, store.national.com/natsemi/cop8refcom1.html, for $99. Experience the benefits of networking your COP8-powered application. The kit includes:

- EMIT 3.0 Evaluation Software on CDROM for National's COP8SGx family. Includes free upgrade to a restricted development license.
- NS-EVAL Collection of COP8 Tools on CDROM.
- Reference board pre-loaded with demo application and containing: 3 LEDs, push button, rotary potentiometer, rotary encoder, light sensor, temperature sensor, hall effect sensor, speaker, and an expansion interface for future prototype development.
- User interface and development tools from Symantec and emWare.
- Standard Web browsers and Acrobat Reader.
- Connectors and battery for out-of-the-box operation.

emWare ANY DEVICE, ANY NETWORK™

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EMIT Software Highlights

The EMIT CDROM contains the EMIT software development environment for rapidly creating a device-networking platform. EMIT software includes the following components (further details are available online at www.emware.com/products/emit.html):

- **emMicro** embedded device object server
- **emGateway**™ bridge between lightweight device networks and TCP/IP networks
- **emObjects**™ JavaBean-compliant components
- The **EMIT Access Library** software tools that allow development of custom control applications
- The **C EMIT Device Simulator,** emMicro on a virtual microcontroller
- **Tools, examples, utilities, and demos**

COP8.COM Kit Contents

- EMIT 3.0 Software Development Kit (SDK)
- Netscape® 4.5 and Microsoft Internet Explorer® 4.0
- emMicro "C" source code port to COP8 Microcontroller
- emMicro hex & COF files used in programming the COP8 device with pre-programmed communications
- On-line EMIT User, Developer, and User Interface manuals
- On-line COP8 Microcontroller specific Platform Guide and Reference Board Manual
- National's NS-EVAL COP8 Tools CDROM
- Reference board with COP8SGR744V8 Microcontroller
- 9V Battery with cable
- RS232 to RS232 device cable

System Requirements

emGateway and Development PC Requirements

• Microsoft Windows® 95/98 or Windows NT® 4.0 or later (32 MB RAM recommended)
• 150 MB HD space for full EMIT installation
• (Optional) 240 MB HD space for Visual Café®
• CDROM Drive 2X or higher
• Available serial port (9-pin D-type or suitable adapter)
• Netscape® 4.05 or Internet Explorer® 4.0 or later
• TCP/IP installed
• (For application development or modification) Software compilers, assemblers, and other tools required

emMicro target COP8 Device Requirements

emMicro	5.5 KB ROM 223 bytes RAM
Application Example (with emMicro)	13 KB ROM 438 bytes RAM

Kit Specifications

Compiler Tested Compatibility:

IAR Embedded Workbench EWCOP8EE ver. 1.2

Hardware Specifications

Power	· 9V Battery included or 120V AC/DC adapter optional
Physical Ports & Drivers	· 1 - DB-9 Serial port RS232 software drivers included · 1 - Bus expansion for added I/O · Supports optional socket for emulator pod
COP8 Microcontroller and Memory	· 10 MHz operating frequency · 32 KB of on-chip EPROM (supplied in OTP package) · 512 bytes of on-chip RAM · 32 KB of on-board EEPROM
Size & Weight	Board: 2 1/2" x 2 2/5" x 4/5", 1.1 oz. Kit: 6 1/4" x 5 1/4" x 2 5/8", 10.4 oz.

Compatibility

Microcontroller	COP8SGx Family
emGateway	3.0.5 or higher
Applets	Java 1.1.2 or higher
Add-On Boards	Protoboard 3.01 or higher

Ordering Information

Visit emStore at www.emstore.com/national/national.html or National Semiconductor's online store store.national.com/natsemi/cop8refcom1.html to purchase the COP8.COM reference application kit.

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