USB/Ethernet Gateway Module
for Cy-Net3™ over Micrel RadioWire™

Cyan USB/Ethernet Gateway Module for Cy-Net3, provides back channel connectivity, linking the RF network to a monitoring and control centre via the Internet but also with USB peripheral capability and a memory card connector. It has high pin count connectors that allow user access to many of the peripherals of the microcontroller and is footprint compatible with the Cyan USB/Ethernet production-ready module. A development carrier board can be used to provide power and comms / debug interfaces to the module.

The diagram below outlines the philosophy:
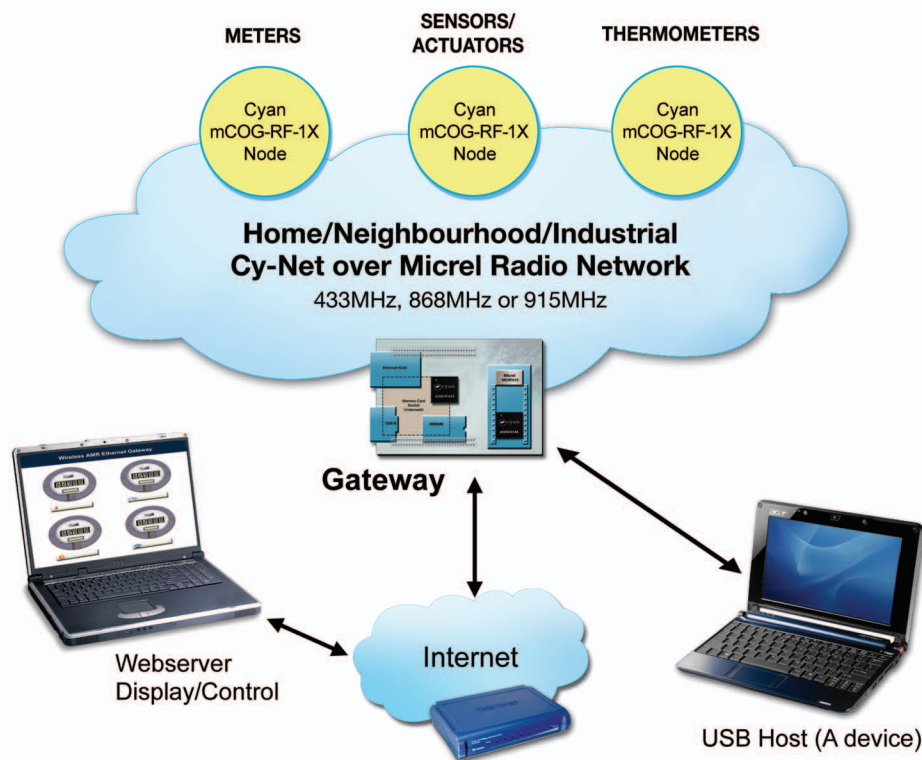
Part Number	Description
mCOG-UPE-1X-M1-8	Module 868MHz Cy-Net + Ethernet + USB peripheral
EVALKIT-UPE-1X-M1-8	Module + Base Board + Dongle + Cables + CyanIDE
DEVKIT1X-USB/ETHERNET	USB/Ethernet Development Kit

Other frequencies are available please contact: sales@cyantechnology.com for details

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Applications:

- Automatic Meter Reading (AMR)
- Advanced Metering Infrastructure (AMI)
- Home Area Networks (HAN)
- Industrial Wireless Sensor Networks (WSN)
- Security systems
- Process control

Cy-Net3 Features:

- Ad hoc mesh networking
- Self forming, self healing
- Low power
- Small code size
- Simple, elegant and reliable protocols
- Modular design
- In-field programmable
- Unicast and Broadcast support
- Routes established as required; expire when no longer required
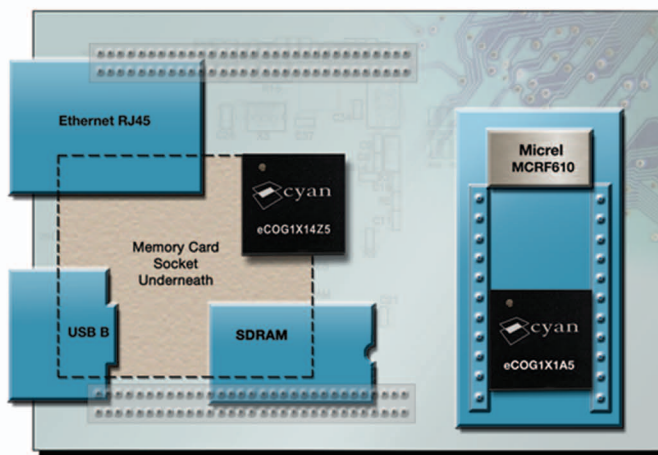- Algorithms to ensure network stability under link/node failures and multiple routes

mCOG-RF-1X-M1-4/8/9 Features:

- 70MHz eCOG1X1A5 MCU
- Cy-Net3 RF Stack
- Micrel MICRF600/610/620 RF transceiver
- 433, 868 and 915MHz ISM Band frequencies
- AT command set interface

Micrel MICRF6x0 Features:

- RadioWire™ programmable FSK transceiver module
- Supports half duplex bi-directional RF links
- Digital Bit Synchronizer
- Received Signal Strength Indicator (RSSI)
- RX and TX power management
- Power down function
- Register read back function

Cyan MCU Features include:

- 70MHz eCOG1X14Z5
- 512KB Flash / 24KB RAM
- 10/100 Ethernet MAC
- USB 2.0 controller
- 5 multi-purpose timers
- Code security feature
- Accessible on module pins:
    - 12-bit ADC (8 I/P)
    - 12-bit DAC (2 O/P)
    - UART, I2C & SPI serial
    - Parallel I/O port

Image for illustrative purposes only

Software included with CyanIDE®:

- GNU C Compiler / Debugger, Eclipse IDE
- Webserver demo
- Open source TCP/IP stack with support for HTTP, FTP, SMTP,Telnet, DHCP, TFTP, BOOTP, SNTP & SNMP
- FAT16 / FAT32 filing system
- SD / SDHC / MMC low-level device interface
- USB CDC, HID and MSD (mass-storage) device classes

Gateway Module Key Features:

- Small size approx. 2" x 3"
- eCOG1X14Z5 MCU
- mCOG-RF-1X-M1 Cy-Net module
- 16MB external SDRAM
- SD/SDHC/MMC socket
- 100Base-T Ethernet PHY and RJ45 connector
- Preprogrammed MAC address and serial number
- USB 2.0 Full-Speed peripheral (B socket)
- Two 2x20 pin connectors bring out many MCU pins for customer use – same footprint as Cyan USB/Ethernet module
- Development base board available, providing power and debug
- Connectors arranged for easy panel mounting
- 0-70 deg C operating temperature range
- Single 3.3V supply
- FCC/ETSI/CE approvals pending

MICREL®