



Network Manager

Ultra low-power, low-cost
wireless sensor networks

www.metronomesystems.com

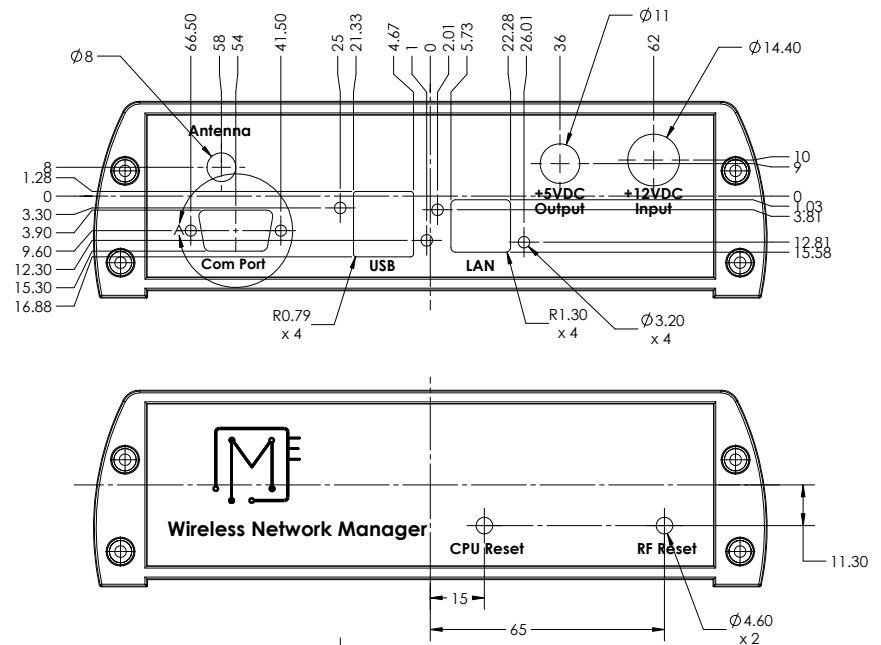
General Description

The Metronome Systems Network Manager supports and controls a wireless sensor network of NeoMotes and Sensing Relay boards. Using the latest technology from Dust Networks, the Metronome manager can control up to 100 nodes! Networks controlled by the Metronome Manager can now span 10's of kilometers and provide a granularity of spatiotemporal previously unheard of. The Network Manger runs Debian LINUX, providing for number-crunching, control and interconnection with thousands of peripherals. Automated scripts collect, store and transmit data. Communications are through two USB and one serial interface and well as Ethernet. A completely wireless solution is available using cell or Inmarsat modems to send data to the outside world. The Network Manager is extremely low power, using < 50mA at five volts.

Metronome systems provides wireless ultra-low power, highly reliable, true systems-level solutions for a broad suite of real-time sensing and control applications. The elements of the MS wireless sensor network are designed to provide multi-year long battery life on a pair of AA batteries. Every system component is rated for industrial applications (-40°C to +80°C), enabling the use of the entire system in extreme environments.

System design

- Ultra low power 396MHz ARM9 CPU
- Ultra-low power consumption (< 50 mA @ 5 V)
- Support for connection of 100 NeoMotes (large mesh networks)
- 128MB DDR-RAM
- 256MB SLC XNAND Drive
- 1 MicroSD Card Slot (used to boot custom Debian Linux OS)
- 3 UARTs, 1 SPI, 1 I2C, 1 I2S, 4 ADC
- 2 USB Hosts, 10/100 Ethernet Port, Com port
- Watchdog Timer, Real Time Clock and Temp. Sensor
- Power input 5 – 24 V
- 5 and 12 V output for peripherals
- Fanless Operation from -40°C to 85°C



Wireless Sensor Networks

- *Dust Networks' Eterna™* SoC WSN technology
- Automatic network formation
- Full-mesh networking can easily scale to tens of thousands of nodes
- Time-synchronized communication over 15 frequency channels eliminates in-network collisions and multipath effects
- Greater than 99.99% network reliability even in the most challenging environments
- AES-128 bit encryption
- Compliant with IETF 6LoWPAN and IEEE 802.15.4e
- IPv6 Internet of Things compliant, enabling each node with a unique Internet-ready IP address