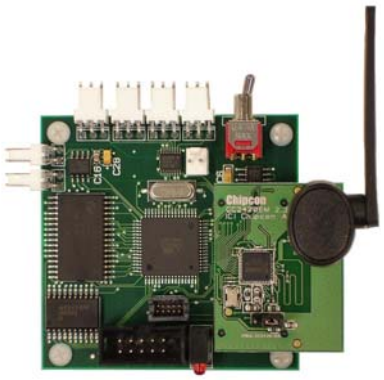

NARADA

WIRELESS SENSING AND CONTROL SYSTEM

OVERVIEW

The Narada wireless system is an intelligent data acquisition and control solution built around the low-power Atmel ATmega128 microcontroller. Designed for applications requiring high resolution data collection, the Narada system has a four-channel 16-bit ADC and 128kB of supplemental SRAM for temporary data storage. Unique amongst its competitors, the Narada also incorporates a two-channel 12-bit DAC for wireless control applications.

By leveraging the versatile TI CC2420 wireless radio for IEEE 802.15.4 communications and an optional high-gain radio for extended range, the Narada system is capable of reliable data transmission in large networks and at distances of up to 600m.

An extensive software development kit is also available for purchase with the Narada hardware. This kit contains tools to help create intelligent software solutions for both the embedded and the PC environment that are applicable to a variety of sensing and controls applications.

CPU	
Processor	Atmel ATmega128
FLASH	128 kB
EEPROM	4 kB
SRAM	4 kB
External SRAM	128 kB
External Clock Speed	8 MHz

DATA ACQUISITION	
Input Channels	4 Single Ended / 2 Differential
Analog-to-Digital Conversion	16-bit Resolution (0 - 5 V)
Data Storage Capacity	128kB (> 60,000 data points)
DC Sensor Excitation	+5 V DC
Real-Time Data Throughput	1,500 samples / sec
Maximum Sampling Rate	10,000 samples / sec

GENERAL INFORMATION	
Dimensions	69mm x 72mm x 12mm (with standard radio)
Base Station to PC Interfaces	RS-232, USB

VOLTAGE ACTUATION	
Output Channels	2
Digital-to-Analog Conversion	12-bit Resolution (0 - 4 V)
Maximum Output Current	15 mA

RADIO	
Transceiver	TI CC2420
Frequency Band	2.4000 - 2.4835 GHz
Data Rate	250 kb/s
Range (line of sight)	50m (standard radio) 600m (high gain radio)

POWER CONSUMPTION	
Current Draw in Sleep Mode	10 mA
Current Draw in Active Mode	30 mA
Current Draw in Rx/Tx Mode	52 mA
Input Voltage	6.0 - 9.0 V
Batteries	5/6-AA or 1-9V

Narada hardware design licensed from the University of Michigan

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