

4100-MAST

radio telemetry system

- *System ships ready for deployment*
- *License-free radio telemetry*
- *8 analog & 4 digital sensor inputs*
- *Internal battery with solar charging*
- *Rugged NEMA 4X fiberglass enclosure*

The **4100-MAST** system utilizes spread spectrum radio telemetry and solar charging to create a truly plug-and-play data collection and sensor interface platform. The system integrates a NexSens **4100-iSIC** spread spectrum radio data logger, high-gain radio antenna, and 20-watt solar power kit - all in a compact, pre-configured package. Simply thread the system to any 2" NPT male pipe thread, connect the solar panel & battery, wire the sensors, and setup a project using **iChart** software - it's that simple!

The **4100-iSIC** data logger incorporates a built-in radio modem for license-free data transmission over a 900 Mhz radio frequency to a nearby NexSens base station. Radio base station options include radio-to-cellular, radio-to-landline phone, radio-to-Ethernet, and radio-to-PC. The data logger supports up to 8 analog inputs and 4 digital inputs for multi-sensor data logging. The integrated system offers sealed connectors, corrosion-resistant stainless steel hardware, and built-in lightning protection to ensure reliable performance in the harshest outdoor conditions.

NexSens **iChart** Software is a Windows-based program for interfacing both locally (direct-connect) and remotely (through telemetry) to an iSIC data logger or network of data loggers. The **iChart** Setup Device Wizard includes built-in drivers and a step-by-step interface for setting up and configuring remote monitoring sensors and systems. When connected, the user can quickly configure sample & log intervals, upload data, or troubleshoot communications.



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specifications

Analog Inputs	(4) differential or (8) single-ended, additional (4) differential or (8) single-ended optional, 0-2.5 V auto range, 12-bit resolution
Analog Outputs	(1) 12-bit channel, (1) 12-bit channel optional, 0-5 V or 0-0.25 V programmable
Power Outputs	(1) 12 V 100 mA configurable switch, (1) 5 V 50 mA analog excitation voltage, (1) 12 V output, fused from battery
Pulse Counters	(1) tipping bucket counter, max rate: 12 Hz
Digital I/O Ports	(2) standard generic I/O ports
1-Wire Interface	(1) 1-wire temperature sensor port
SDI-12 Interface	(1) SDI-12 port
RS-232 Interface	(3) RS-232 sensor ports, (3) additional optional
RS-485 Interface	(1) RS-485 port
Host Interface	(1) RS-232 host port, SDI-12 or RS-485 port can be configured as slave
Supported Serial Comm Protocols	NMEA 0183 or Modbus RTU
Internal Memory	2 MB Flash memory, over 500,000 data points minimum
Power Requirements	Data Logger: 5 to 16 VDC, Radio Modem: 6 to 30 VDC
Typical Current Draw	Data Logger: 5 mA sleep, 10 mA processing, 36 mA analog measurement, Radio Modem: 86 mA receive, 500 mA transmit, 21 mA idle, < 1 mA power off
Battery	12 V 8.5 A-Hr battery, internal
Temperature Range	-20 to +60°C
Dimensions	NEMA 4X enclosure: 12" x 8.5" x 6.95"
Compatible Sensors	4-20 mA sensors, 0-2.5 V sensors, SDI-12 sensors, RS-232 sensors, RS-485 sensors, Modbus RTU sensors, NMEA 0183 sensors, 1-Wire temperature sensors, Thermistor
Radio Frequency Range	902-928 MHz
Radio Data Transfer Rate	115.2 Kbps standard
Radio Communication Range	5 miles line of sight, extended range with repeater systems
Radio Error Correction	32-bit CRC; auto retransmit
Contents	(1) 4100-iSIC spread spectrum radio data logger (1) A22 20-watt solar power kit (1) A44 High gain radio antenna with aluminum angle bracket (1) A35 2' RF cable, N-style connectors (1) A55 Pole/wall mounting kit (1) MAST 2" NPT aluminum Pole, 24" length (1) 2" NPT PVC pipe cap (1) 2" NPT aluminum female pipe coupling

parts list

Part #	Description
4100-MAST	Mast-mounted 4100-iSIC data logging system with spread spectrum radio telemetry & solar charging kit
A38	Ground Kit
A38-P	Ground kit, pipe attachment
1001	iChart Software for Windows-based computers



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