# YSI EcoNet™ Data and Access Nodes

## An integral part of YSI EcoNet's complete data management solution

Start collecting data faster and easier than ever before with YSI EcoNet Data and Access Nodes.

- **Comprehensive monitoring, reporting, and early intervention capabilities to prevent problems**
- **Optimized for use with YSI sondes, systems and SonTek/YSI products**
- **Compatible with all SDI-12 and most analog or digital sensors**

## Access Node Communication Options

- 900MHz (2.4 GHz) Spread Spectrum RF Link to Data Node network

Internet interface via:
- Phone line (land line)
- Wireless digital cellular (GSM/GPRS, CDMA)
- Wireless analog cellular (AMPS)
- Wireless LEO satellite (OrbComm)
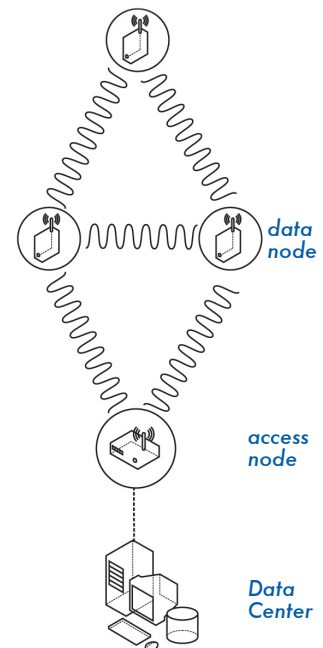- Wired/wireless ethernet (10/100BaseT, 802.11b/g)

## Data Node Communication Options

Remote internet interface via EcoNet Access Node through 900 MHz (2.4 GHz) spread spectrum link to Access Node network and other Data Nodes via mesh network.

*YSI EcoNet Data Node with optional LCD screen and Keypad.*
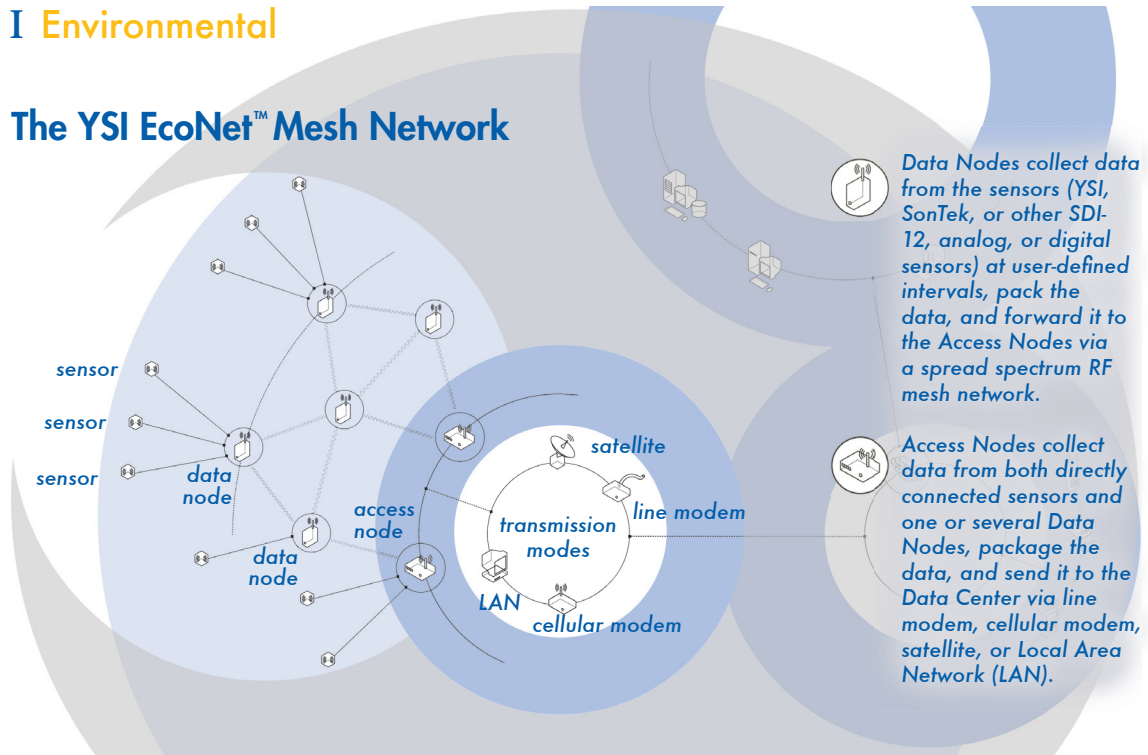
### Node Meshing

Expand system/site coverage while reducing transmission costs. YSI EcoNet's node meshing solution creates a wireless network in minutes. The wireless mesh network topology allows "point-to-point" or "peer-to-peer" connectivity and creates an ad hoc, multi-hop network.

- Self Configuring
    Self-organizing; requires no manual configuration.
- Self-Healing
    Human intervention is not necessary for message rerouting.
- Redundant
    Adding more nodes increases data transmission paths.
- Scalable
    The network doesn't depend on a centralized point, making additions to the mesh network easy and convenient.

# Y S I EcoNet™
## Web-enabled Remote Monitoring and Control

data node

access node

Data Center

www.ysieconet.com

## The YSI EcoNet™ Mesh Network



*Data Nodes collect data from the sensors (YSI, SonTek, or other SDI-12, analog, or digital sensors) at user-defined intervals, pack the data, and forward it to the Access Nodes via a spread spectrum RF mesh network.*

*Access Nodes collect data from both directly connected sensors and one or several Data Nodes, package the data, and send it to the Data Center via line modem, cellular modem, satellite, or Local Area Network (LAN).*

## YSI 6305-xx & 6306-xx EcoNet Console Specifications

| | |
|---|---|
| **Operating Temperature** | -25°C to +55°C |
| **Power** | Main input voltage : 7.5 – 16 V DC<br>Rechargeable gel-cell battery, or lead acid (Minimum recommended:  12 V, 18 Ah)<br>Typical current consumption:<br>    Normal Operation: 55-70 mA<br>    Sleep Mode: 12-15 mA |
| **Memory** | 16 MB Flash, 32 MB SDRAM |
| **Size** | Length:   8.75 in. (22.2 cm)<br>Width:    5.25 in. (13.3 cm) includes connectors<br>Height:   5.0 in. (12.7 cm) |
| **LCD/Keypad (6305 only)** | Alphanumeric LCD, 4 lines x 20 characters<br>Numeric 4 x 4 keypad (0-9, *, #, A-D) |
| **Ethernet** | 10 MB on-chip ethernet controller<br>10BASE-T port with analog filters |
| **Input/Output**<br>    **Analog** | 8 Configurable 12 bit analog inputs<br>Input Voltage: 0 - 2.4 V<br>    Configurable as:<br>        Single-Ended (7 available channels + 1 internal battery monitor)<br>        Differential (3 differential pairs)<br>        4-20 mA Loop (7 available channels)<br>Programmable gain: 0.5, 1, 2, 4, 8 |
|     **Digital** | 8 User-configurable Digital I/O (24 channels optional)<br>    Configurable as:<br>        Input (5 V tolerant)<br>        Output (max 3 mA)<br>        Pulse Input (accumulation available)<br>Digital port output high voltage: 0.8 to 3.1 V<br>Digital port output low voltage: 0.3 to 0.5 V<br>Digital port I/O capacitance: 8 pF |
| **Serial Comm Ports** | 1 RS-232 Diagnostic Port<br>4 RS-232 Multiplexed serial ports, used for sensor channels as selectable receive ports.<br>1 SDI-12 serial port, supports up to 10 SDI-12 sensor devices at 1200 bps data rate.<br>    Allows concurrent communication under software control. |
| **Switched Power Supplies** | 3 x 12 V Switched Supply, 12 V, 1 A max<br>1 x 3.3 V Switched Supply, 3.3 V, 50 mA max<br>2 x 2.5 V Switched Supply, 2.5 V, 50 mA max<br>1 x 5 V Switched Supply (used internally), 5 V, 100 mA max |