



eKo Node

FOR ENVIRONMENTAL MONITORING



The eKo Node is a fully integrated, rugged, outdoor, solar-powered wireless sensing device that allows users to quickly and easily deploy a multi-point monitoring solution that provides real-time data from their environment. The eKo Node uses an energy-efficient radio and sensors for extended battery-life and performance. The node is capable of an outdoor range up to 2 miles depending on the deployment environment and node hardware configuration chosen.

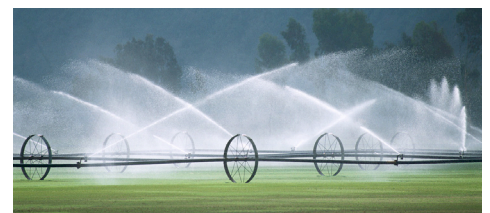
Each node can accommodate up to 4 different sensor types. The simple ESB interface allows users to not only choose from Crossbow's vast portfolio of sensors, but integrate their own 3rd party sensors as well.

The eKo Node integrates Crossbow's IRIS processor/radio board and antenna that are powered by rechargeable batteries and a solar cell. The nodes themselves form a wireless mesh network that can be used to extend the range of coverage.

By simply adding an additional eKo Node, it is easy to expand your coverage area. The nodes come pre-programmed and pre-configured to form a true mesh network and require about 1-2 hours per day of sunlight exposure to keep their batteries charged. The enclosures have a metal bracket on the back that can be used to secure the units to stakes.

Features:

- Reliable Wireless Mesh Communication
- Solar Powered
- Effortless Setup and Scalability
- No Monthly Fees
- Customizable Alarm Settings and Alerts
- Environmental Sensor Bus (ESB) for plug-and-play sensor capability





eKo Node	EN2100	EN2120
Sensor Ports		
Number of Ports	4: Each port can support one eKo compatible sensor.	
Sensor Types	Each port supports either an eKo compatible simple or smart sensor (Crossbow ESB protocol).	
Sensor Measurement Interval	One measurement every 15 minutes (default).	
Connectors	Compatible with 6 pin, Switchcraft	
Radio		
Frequency	2.405 to 2.480 GHz	
Channels	16 channels available selectable via rotary switch	
Type	DSSS, IEEE 802.15.4	
Transmitter Power Output	+3dBm (typical)	+18dBm (typical*)
Receive Sensitivity	-101dBm (typical)	
Outdoor Range Per Single Radio Hop	Typical 500ft to 1500ft line-of-sight per hop.	Typical 2000ft to 2 miles line-of-sight per hop.
Outdoor Coverage (typical)	<ul style="list-style-type: none"> • Flat with no overhead canopy: 1 eN2100 per 15-25 acres • Hilly but no overhead canopy: 1 eN2100 per 5-7 acres • Overhead canopy such as forest, orchards: 1 eN2100 per 1-2 acres 	<ul style="list-style-type: none"> • Flat with no overhead canopy: One eN2120 per 100-150 acres • Hilly but no overhead canopy: One eN2120 per 20-30 acres • Overhead canopy such as forest, orchards: 1 eN2120 per 4-5 acres
Antenna	Dipole, internal	
Certification	  	
Visual Indicators		
LED	One tricolor LED to indicate sensor and network connectivity	
Power		
Operating Current	0.4 mA average (no sensors) at 15 minute data sampling rate	0.5 mA average (no sensors) at 15 minute data sampling rate
Solar Panel	Self-contained 1.3"x 2.5" solar panel to recharge batteries	
Batteries	Standard: 3 AA low-leakage NiMH rechargeable (via internal solar panel). Life Expectancy: 3 months with no solar recharging; > 5 years field life	
Mechanical		
Water / Dust Resistance	IP66 (Protected from dust and high pressure water jets)	
Operating Temperature	-40C to +60C (battery life degraded above 50C)	
Operating Humidity	0 to 100 %RHI, Condensing	
Storage Temperature	-45C to +70C (excluding battery)	
Mounting Bracket	Wall/pole attachable bracket for quick disconnect of eN2100.	
Size	3.75" x 3.5" x 10.5" / 95 x 89 x 267mm	
Weight	1.2 lbs/544g	

*Non-US: typical +10dBm

Ordering Information

Model	Description
EN2100	eKo Standard Node
EN2120**	eKo Long Range Node



** EN2120 pending international certifications. Available for purchase for US end-use only.



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