

Dust Networks: Defining the Way to Connect Smart Devices

Dust Networks®, a pioneer in the field of wireless sensor networking, is defining the way to connect smart devices. Dust Networks delivers reliable, resilient and scalable wireless products with advanced network management and comprehensive security features. Dust Networks products are built on break-through Eterna™ 802.15.4 SoC technology, delivering ultra-low power consumption for wire-free operation on batteries or energy harvesting. Working with Dust Networks, wireless sensing applications can be deployed anywhere data can be gleaned.

INNOVATION

“Smart Dust” was first conceived by Dr. Kris Pister, Founder and Chief Technologist of Dust Networks, in the late ‘90s as a simple way to deploy intelligent wireless sensors. Today, commercial wireless sensor networks (WSNs) are key to enabling a variety of applications to help make the planet smarter: everything from Smart Cities to Smart Industrial Plants to Smart Buildings to Smart Homes.

A SmartMesh® network consists of a self-forming mesh of nodes, known as "motes", which collect and relay data, and a network manager that monitors and manages network performance and sends data to the host application. The hallmark of a SmartMesh network is that it combines time diversity, frequency diversity, and physical diversity—to assure reliability, scalability, wire-free power source flexibility, and ease-of-use. Every mote in a SmartMesh network—even the routing nodes—can run on batteries for years, allowing the ultimate flexibility in placing sensors exactly where they need to go with low cost ‘peel and stick’ installations.

All motes are based on Dust’s IEEE 802.15.4 SoCs, and Eterna™ is the breakthrough technology that makes Dust's products ultra-low power. Eterna-based products are up to 8x lower power consumption than competitive offerings, which means battery powered devices built on Eterna technology last up to 8 times longer, and can be 8 times “greener” even if line powered. Eterna’s low power innovation also enables battery-free energy harvesting, where the power for the device is literally gleaned from the small bit of energy created from a button push, ambient vibration, hand squeeze, or other harvester.

PRODUCTS

Dust's broad portfolio includes a variety of standards-based products, including; SmartMesh IP, SmartMesh Industrial/WirelessHART™ and ZigBee. Dust offers everything from chip and stack solutions to complete wireless systems, including IEEE 802.15.4 mote modules, motes-on-chip and network and security management software and hardware.



SmartMesh IP is built for IP compatibility, and is based on 6LoWPAN and 802.15.4e standards. The SmartMesh IP solution is widely applicable and cost-effective, and enables up to 8x lower power consumption even in harsh, dynamically changing RF environments.



SmartMesh WirelessHART complies with the WirelessHART (IEC 62591) standard, offers the lowest power consumption in its class, and is the most widely used WirelessHART product available.



SmartMesh Industrial products are designed for the harshest industrial environments, where low-power, reliability, resilience and scalability are key.



ZigBee solutions provide battery-free energy harvesting with Eterna™ technology.

CUSTOMERS AND APPLICATIONS

Dust Networks customers range from the world's largest industrial process automation and control providers such as GE and Emerson, to innovative, green companies such as Vigilant and StreetLine Networks. Dust technology can be found in a variety of monitoring and control solutions, including data center energy management, renewable energy, remote monitoring, transportation, and much more.

PHILOSOPHY

At Dust Networks we envision a world of ubiquitous sensing—connected sensors scattered around the globe gathering useful information that was previously impractical or impossible to acquire. At Dust Networks we are passionate about enabling a smarter and greener planet.