

# Inscape Data

The Expert in Wireless and IP Video Systems

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Inscape Data strengthens its PTZ network video camera portfolio by introducing the AirGoggle NVC910 compact vandal proof indoor or outdoor use weather resistant 10x optical zoom speed dome camera. The AirGoggle NVC910 has the smallest footprint in its class and is an ideal low cost PTZ video solution to meet stringent budget requirements. It is reliable and discreet for overview or detailed inspections. The new high performance package is an exciting extension of our professional network camera line and provides our customers with economical and rich feature security surveillance solutions in a compact, small, and weatherproof package

### 1 Technology Corner: AirEther IEEE 802.11 Standardized Product

### Technology Corner: AirEther IEEE 802.11 Standardized Product Technology Overview

The IEEE (Institute of Electrical and Electronics Engineers, Inc) or also pronounced as (Eye-triple-E) is the world's leading professional non-profit association for the advancement of technology. It serves the aerospace, biomedical, electric power, consumer electronics, and computers and telecommunications industry. IEEE standardization efforts are organized by projects, each of which is assigned a number. The most famous IEEE project is the IEEE 802 project to develop LAN standards. Within each project, individual working groups develop standards to address a particular facet of the problem. Working groups are also given a number, which is written after the decimal point for the corresponding projects. Ethernet, the most widely used IEEE LAN technology, was standardized by the third working group, 802.3. Wireless LANs were the eleventh working group formed, hence the name 802.11.

### 1 Premier Partner Giveaway: Winner Announced

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### 2 Help Desk : Answering Your Support Questions

### Premier Partner Program Giveaway \*We have a winner\*

### 2 Success Stories

Congratulations to Premier Partner Isotech Inc for winning our GPS drawing. Inscape Data gave away a chance to win a Garmin GPS to customers that are part of the Premier Partner Program. Purchases made of at least \$500 per order on July 1<sup>st</sup> 2007 through September 30<sup>th</sup> 2007 received one entry into the drawing.



If you are interested in becoming a Premier Partner, please go to [inscapedata.com/sales.htm](http://inscapedata.com/sales.htm) to read more and enroll in to the program.

Within a working group, task groups form to revise particular aspects of the standard or add on to the general area of functionality. Task groups are assigned a letter beneath the working group. The case of the letter in a standards revision encodes information. Lowercase letters indicate dependent standards that cannot stand alone from their parent, while uppercase letters indicate full-fledged standalone specifications. For example, 802.11b adds new clause to 802.11, but cannot stand alone, so the "b" is written in lowercase. In contrasts, the 802.1X are self-contained and standalone specifications where as 802.11n is not.

IEEE 802 family, which is a series of specifications for LAN technologies focuses on the physical (layer 1) and data link (layer 2) of the OSI model. Physical layer defines all the electrical and physical specifications for devices.

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At a glance, the AirGoggle NVC910 has the following all-in-one key features:

- Pan, Tilt, and Zoom control over IP Network
- 360 Degrees Pan with Auto-Flip
- 100x total zoom, 10x optical, 10x digital
- True Day & Night Mechanical Removable Filter (IR Compatible)
- Power Over Ethernet
- Compact Tamper-Resistant Vandal Proof Rugged Enclosure Design
- Weatherproof rating to IP66 standard with Heater and Blower
- Full D1 MPEG-4 720x480 resolution with De-Interlacing Filter
- Maximum 30 Frames Per Second Full Motion Video
- Multi-region motion detection
- Event driven real-time notification
- Simultaneous user access
- Embedded streaming web server
- 64 channel full featured professional video monitoring and recording software
- ROHS Compliant

To meet stringent budget requirements, the low cost AirGoggle NVC910 IP PTZ camera is the perfect camera for indoor or outdoor environments such as schools, retail shops, government buildings, banks, parking lots, residential communities, and other facility requiring tamper-resistant low light video surveillance.

Mechanically, the pan/tilt/zoom feature can be controlled locally via rs-485 interface or over the IP network for true remote surveillance. The 360 degrees pan with auto-flip allows for continuous circular movement with no restriction by traditional mechanical stop. The Auto flip feature can instantly flip the camera head 180 degrees and continue to pan beyond its zero point. The smooth and continuous camera movement can follow a person passing regardless of direction.



AirGoggle NVC 910  
Compact Vandal Proof Speed Dome Camera with 10X Optical Zoom

The camera's hardware MPEG-4 encoding engine and CPU can process the most active and intensive video images resulting in high quality fluid full motion video delivering full D1 720x480 resolution while preserving network efficiency. Network efficiency allows for streaming of more cameras per local area network or wireless local area network. The synchronized two-way audio and video communication allows for microphone input for audio surveillance and remote audio announcements via loud speaker. The IR day and night operation with digital shutter speed delivers optimal day time color video and super low light night time surveillance in a single camera. Multi-region motion detection allows motion detection of multiple zones by masking the camera's viewing area. The event driven real-time notification allows actionable event trigger able to send a video clip via email or FTP and turn on or off relays. Simultaneous user access and embedded web server allows for the use of the video system as a stand-alone web server or multiple monitoring stations. For the first time, included with every network video system purchase, a FREE copy of 64 channel network video monitoring and recording software is included. The full feature professional recording and surveillance PC software allows monitoring to be done on a PC without expensive dedicated CCTV monitor or controller. The NVM 1000 64 channel software allows simultaneous display of up to 64 channel videos and 16 channel play back across 5 monitors. The inclusion of FREE 64 channel professional network video management software with no licensing restriction is an industries first offering of its kind. Inscape Data is very pleased to offer the added value for our loyal customers.

The AirGoggle NVC910's PTZ programming is capable of panning and tilting at speeds up to 200 degrees per second. The PTZ feature sets includes impressive 165 preset positions, auto scan, 8 group tours (each consist of 60 preset positions), 8 programmable patterns, 8 programmable sectors, 24 privacy masking zones, 2 alarm input and 1 relay outputs. The alarm inputs can be programmed to trigger any one of the preset positions for on the spot identification. Whether the surveillance needs is for private business or homeland security the AirGoggle NVC910 will meet or exceed any customer specification.

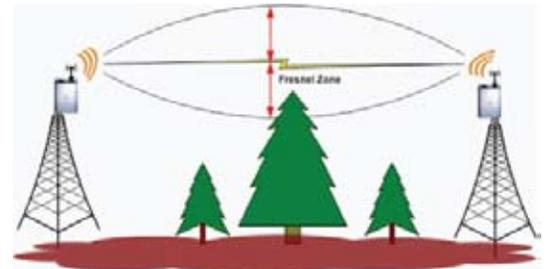
The AirGoggle NVC910 cameras are immediately available. Please contact your Inscape Data authorized distributor or reseller for purchasing information. For general inquiry, email sales@inscapedata.com or call 408-935-8500.

## Line of Sight

Inscape Data's AirGoggle radios are designed and optimized for long range and Line of Sight (LOS) implementations. Line of Sight means that there should be a clear path between the antennas. Because of the nature of wireless signals, any obstruction in the path will cause the signals to bounce and spread through different areas known as multi-path.

Besides LOS there is also Fresnel zone (pronounced 'fre-nel' the "s" is silent) consideration. This zone is an elliptical area immediately surrounding the visual path. It varies in thickness depending on the length of the signal path and the frequency of the signal.

2.4 GHz signals can pass walls, but have a tough time passing through trees. The reason is the water content in each: Walls are dry and trees contain high levels of moisture. 2.4 GHz radio waves absorb water quite well,



that is why you can cook food in a microwave. Therefore trees within the Fresnel Zone will attenuate the wireless signal. Limited obstruction of the Fresnel zones can often be tolerated if it is within 20% or less.

Here are few tips for outdoor antenna or radio installation:

1. Make sure you have a solid mechanical installation of the antenna so wind will not cause misalignment or even damage to the antenna
2. Determine LOS (Line of Sight)
3. Make sure there are no large conducting objects in the area (Ex: lakes)
4. No other antennas close
5. Make sure there are no trees obstructing the Fresnel Zone. If the trees are not an obstruction now, it may be in the future. Some trees do change its composition seasonally and with all living things, it does grow over time.
6. Always use a lightning arrestor and follow Inscape's Grounding and Lightning protection procedures (included with our products)

## Success Story

### Sunrise Mall Wireless Kiosk

Sunrise Mall is a premier shopping destination near Sacramento California, with over 6,500 parking spaces and 120 stores of shopping experience. In addition to specialty stores, it also has a number of terrific restaurants, soft seating areas, and year round special events. In 2006, Sunrise Mall had the need to install information kiosks throughout the facility to improve accessibility and guest experience. Sunrise Mall management team granted DDK Communications, Inc. to implement the project. Mr. Dennis Krohn Jr., senior computer and networking consultant of DDK Communications, Inc. choose Inscape Data's AirEther wireless connectivity solution to wirelessly link the information kiosk located throughout the 120 retail shop complex. Using several AirEther AB54 series long range industrial access points, a wireless backbone was created linking the north and south end of the mall with 20Mbps of throughput network connectivity. The backbone is ideal for future network expansion to provide wireless internet connectivity in the food courtyard and strategic areas throughout the mall.

"The greatest things I liked about the AB54 series access points are ease of use, great configuration utility software, and most of all easy to install. Our customer, Sunrise Mall was able to save money on this project and the Inscape Data wireless networking solution allows of scalability for future network expansion. Our customer was able to deploy their project within budget and timeline. It has worked flawlessly for the past year."

Dennis Krohn Jr.  
DDK Communications, Inc  
Roseville, CA

# Technology Corner: AirEther IEEE 802.11 Standardized Product Technology Overview

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It defines in particular the relationship between a device and the communication medium. In other words, it defines the protocol which interconnects devices together to form a network. Data link layer describes the functional means to transfer data between network entities. It provides access control, device identification, error checking, and the essentials for reliable data communication. IEEE 802.11 (WLAN standard) introduces physical layer communication methods using FHSS (Frequency Hopping Spread Spectrum) and DSSS (Direct Sequence Spread Spectrum). 802.11b specifies high-rate direct-sequence layer (HR/DSSS). 802.11a describes a physical layer based on orthogonal frequency division multiplexing (OFDM). 802.11g, the newest addition provides higher data speeds using OFDM. Below is a table of data speed based on working group.

### WLAN Speeds based on 802.11 working group

Working Group	Maximum Data Rate/Speed
802.11	2 mbps
802.11b	11 mbps
802.11g	54 mbps
802.11a	54 mbps
802.11n	300 mbps

802.11n also known as MIMO is a working standard to bring even higher data rate for multi-media applications. IEEE 802.11 has been readily available since 1998 offering speeds at 2 mbps and 2001 at 54 mbps. Late 2008, the introduction of 802.11n will deliver speeds in the 300 mbps range. IEEE 802.11 is one of the most successful industry standards in history. It has been experiencing exponential growth in multi-industry support and rapid advancement with newer extensions released periodically to enhance wireless performance.

### 802.11 Nomenclature

802.11 networks consist of four major physical components. Access points, Stations, Wireless Medium, and Distribution System.

#### Access Points

Access points function as media converters from one type to another. It performs the wireless-to-wired bridging function as its core functionality.

#### Stations

Networks are essentially built to transfer data between stations. Stations are computing devices with wireless network interfaces. Since 802.11 is fast in becoming the defacto standard for linking together consumer electronics, device with 802.11 wireless interfaces is rapidly increasing from portable handheld scanners to mobile computing.

#### Wireless Medium

To move data from station to station, the standard uses a wireless medium. Radio Frequency has been the most popular although Infrared (IR) is also available. The top two popular frequency usages are 2.4 GHz and 5 GHz spectrum. Although 2.4 GHz is internationally accepted spectrum for use with WLAN, 5GHz and other frequencies are also becoming popular.

#### Distribution System

When several access points are used to provide large network coverage area, they also need to talk to each other and track stations moving from one coverage area to another. Distribution system essentially functions as a backbone to pass data to their destination. Ethernet has been the most successful backbone network and is available in almost all IEEE 802.11 access points.

Inscape Data fixed broadband wireless products are built upon the IEEE 802.11 standard platform and through proprietary algorithms extends the network communication connectivity range beyond 30km. Users can easily access the Inscape Data AirEther outdoor wireless system's user interface to adjust for distance and performance speed of the network link. The rugged outdoor design boasts IP67 and IP68 product certification and ensures reliable operation during the worst weather conditions. The table below references the Inscape Data outdoor fixed wireless broadband system and core relationship to the 802.11 Nomenclature.

IEEE 802.11 Nomenclature	Inscape Data AirEther Outdoor System	Model # Reference
Access Point (AP)	Access Point (AP)	AB54 Series product set as Access Point Mode
N/A	Bridge/Backhaul (Proprietary)	BR108 AB54 Series product set as Bridge Mode
Station	Client Bridge/ Customer Premises Equipment(CPE)	CB54 Series Product
Medium	2.4 GHz 5.1 ~ 5.8 GHz	AB54 / CB54 Series Product BR108
Distribution	System Ethernet port (RJ45)	All Products (AB, CB, BR) Support Ethernet
WDS (Wireless Distribution System)	Access Point (AP) w/ firmware upgrade	AB54 Series Product

WDS is a relatively new feature allowing access point to communicate with access point wirelessly without medium conversion from wireless to Ethernet and Ethernet back to wireless (Industry term: back to back). It is a great means to deploy very quickly a wireless access point network with built in distribution system for wireless internet connectivity. WDS capability is available on Inscape Data AirEther AB54 series access point via a firmware upgrade. The firmware is downloadable from Inscape Data's website under the support section.

Inscape Data is pleased to offer economical rugged and industrial outdoor long range solutions to the ISP, IT, and security surveillance industries. To learn more about Inscape Data products based on IEEE 802.11 technology, please contact our sales team by e-mail, sales@inscapedata.com, or visit our website at www.inscapedata.com



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### About Inscape Data Corporation

Founded on a culture of business excellence and product innovation, Inscape Data is an industry leader in long range wireless communication and IP based video surveillance systems. They offer a full suite of turnkey solutions for long range 2.4GHz & 5GHz wireless and IP based video surveillance applications, including their AirEther™ Wireless Systems with IP67/68 (Ingress Protection) certified all-weather wireless systems and their AirGoggle™ IP based Video Security Systems based on MPEG-4 video compression standards.

With strong, dependable, and proven manufacturing capabilities in Taiwan, Inscape Data is committed to delivering products that provide differentiated value to its customers and partners worldwide. Continuing in this pioneering spirit of excellence and innovation, Inscape Data looks forward to developing and introducing cutting-edge technology solutions with a unique competitive advantage to the marketplace in the future.