

# APPLICATION NOTE

## THE MOBILE ENTERPRISE

### HEALTHCARE

#### On-Demand Communication between Doctors and Medical Staff

##### The challenge:

Within a hospital, there is a constant barrage of overhead paging announcements. Cell phones are not allowed due to sensitive medical monitoring equipment, so reaching a nurse or doctor requires an overhead page and results in delays in reaching the on-duty doctor or nurse. Studies have shown that up to three hours a day are wasted for each nurse attempting to track down physicians, specialists, and nursing assistants. For every request, a medical professional must leave the patient bedside, return to the nurse's station, make one or more telephone calls or overhead pages, wait for a call-back and then relay information.

##### The solution:

Voice-over-wireless-LAN significantly changes communication inside hospitals. By adding wireless IP phones to the same wireless network used for patient charting or medical management, nurses and doctors can be reached immediately, with no overhead paging or wasted time. New features in the IP telephony system allow user grouping, which greatly facilitates locating the appropriate on-duty specialist. For example, a call can be routed to the group "respiratory care," and the on-duty specialist is automatically called. This eliminates making repeated calls to a list of names in order to locate the available staff. Patient care dramatically improves along with hospital efficiency, as information is exchanged quickly and effortlessly. And IP phone systems are easily linked through traditional PBX systems to the outside world.

##### The products:

- ORiNOCO AP-8000
- ORiNOCO AP-800
- ORiNOCO AP-4000
- ORiNOCO AP-700
- NetLink Wireless Telephones offered by Spectralink
- Hands-free wireless communication devices offered by Vocera



Spectralink  
NetLink Wireless Telephone



Vocera  
Communications Badge



Wired Ethernet





	ORINOCO® CLIENTS			ORINOCO® ACCESS POINTS	
<b>Product</b>	11a/b/g ComboCard 11b/g PC Card	11a/b/g PCI Adapter	11a/b/g/n USB Client Adapter	AP-800, AP-8000	AP-4000M, AP-4000 and AP-4900M
<b>Description</b>	The ultimate in flexibility for connecting to any Wi-Fi® network: 802.11a, b or g	Wi-Fi PCI adapter for connectivity from a desktop to any 802.11a/b/g network	Flexible 802.11a/b/g/n USB Client adapter for Wi-Fi connectivity from any laptop or desktop	Dual-radio enterprise-class indoor 802.11n access point with QoS, simultaneous a/b/g/n support and enhanced security	Dual-radio enterprise-class indoor mesh access point with QoS, simultaneous a/b/g support and enhanced security
<b>Applications</b>	<ul style="list-style-type: none"> <li>Add 802.11a/b/g functionality for mobile connectivity to a laptop</li> <li>Redundant Wi-Fi connectivity</li> <li>Hotspot</li> </ul>	<ul style="list-style-type: none"> <li>Add 802.11b/g functionality for mobile connectivity to any desktop computer</li> <li>Redundant Wi-Fi connectivity</li> <li>Hotspot</li> </ul>	<ul style="list-style-type: none"> <li>Add fast 802.11n functionality for mobile connectivity to any laptop or desktop computer</li> <li>Continuous connectivity even away from the desk</li> </ul>	<ul style="list-style-type: none"> <li>Enable office workers to be mobile while delivering greater throughput performance than at their desks</li> <li>Video and high-speed broadband access solutions for municipalities, public access and local businesses</li> </ul>	<ul style="list-style-type: none"> <li>LAN extension for nomadic access to corporate network, Internet and e-mail</li> <li>Hotspot</li> <li>Guest access to Internet</li> <li>Voice, video and data</li> <li>Mobile connectivity for emergency first responders (AP-4900M)</li> </ul>
<b>Environments</b>	<ul style="list-style-type: none"> <li>Individual user</li> <li>Enterprise end-user</li> <li>Municipal/public safety worker</li> </ul>	<ul style="list-style-type: none"> <li>Individual user</li> <li>Enterprise end-user</li> <li>Municipal/public safety worker</li> </ul>	<ul style="list-style-type: none"> <li>Individual user</li> <li>Enterprise end-user</li> <li>Municipal/public safety worker</li> </ul>	<ul style="list-style-type: none"> <li>Enterprises</li> <li>Hotspots: retail, hotel, airport</li> <li>K-12 and higher education</li> <li>Enterprise metro-area networks</li> </ul>	<ul style="list-style-type: none"> <li>Enterprises</li> <li>Hotspots: retail, hotel, airport</li> <li>K-12 and higher education</li> <li>Enterprise metro-area networks</li> </ul>
<b>Key Features</b>	<ul style="list-style-type: none"> <li>Plug-and-play for Windows PCs or laptops</li> <li>Operates in 802.11b/g (PC Card) 802.11a mode (ComboCard)</li> <li>802.1X, WPA</li> <li>802.11i</li> <li>802.11d global roaming</li> </ul>	<ul style="list-style-type: none"> <li>Plug-&amp;-play for Windows PCs</li> <li>Operates in 802.11a/b/g mode</li> <li>802.1X, WPA, 802.11i</li> <li>802.11d global roaming</li> </ul>	<ul style="list-style-type: none"> <li>Secure, reliable connection from any desktop or laptop</li> <li>Operates in 802.11a/b/g/n mode</li> <li>AES, WPA2, 802.1x, 802.11i</li> <li>802.11d global roaming</li> <li>Base stand allow versatile installation for optimal connection</li> </ul>	<ul style="list-style-type: none"> <li>320Mbps throughput dual radio</li> <li>170Mbps throughput single radio</li> <li>Dual-radio design offers operational flexibility and high capacity</li> <li>Operates in 802.11a/b/g/n mode</li> <li>AES, WPA2, 802.1x, 802.11i</li> </ul>	<ul style="list-style-type: none"> <li>Dual-radio design offers operational flexibility and high capacity</li> <li>Complete mesh architecture support</li> <li>User-selectable 802.11a, b or g operation</li> <li>IEEE 802.11i and AES encryption</li> <li>Quality-of-service for latency-sensitive voice, data and video applications</li> </ul>
<b>SPECIFICATIONS</b>					
<b>Frequency Band</b>	<ul style="list-style-type: none"> <li>802.11b/g: 2.4 GHz</li> <li>802.11a: 5.15-5.85 GHz (ComboCard only)</li> </ul>	<ul style="list-style-type: none"> <li>802.11b/g: 2.4 GHz</li> <li>802.11a: 5.15-5.85 GHz</li> </ul>	<ul style="list-style-type: none"> <li>802.11a/b/g/n: 2.4 and 5 GHz</li> </ul>	<ul style="list-style-type: none"> <li>802.11a/b/g/n: 2.4 and 5 GHz</li> </ul>	<ul style="list-style-type: none"> <li>802.11b/g: 2.4 GHz</li> <li>802.11a: 5.15-5.85 GHz (AP-4000M/AP-4000)</li> <li>4.90-4.99 GHz (AP-4900M)</li> </ul>
<b>RF Protocol</b>	<ul style="list-style-type: none"> <li>802.11b/g</li> <li>802.11a (ComboCard only)</li> </ul>	<ul style="list-style-type: none"> <li>802.11b/g</li> <li>802.11a</li> </ul>	<ul style="list-style-type: none"> <li>802.11b/g/n</li> <li>802.11a/n</li> </ul>	<ul style="list-style-type: none"> <li>802.11b/g/n</li> <li>802.11a/n</li> </ul>	<ul style="list-style-type: none"> <li>802.11b/g</li> <li>802.11a</li> </ul>
<b>Data Rate</b>	54 Mbps	54 Mbps	300 Mbps	600 Mbps (AP-8000) 300 Mbps (AP-800)	54 Mbps
<b>QoS</b>	Draft 802.11e	Draft 802.11e	802.11e, WMM	802.11e, WMM	Draft 802.11e; 802.1p
<b>Security</b>	<ul style="list-style-type: none"> <li>AES</li> <li>WPA (Wi-Fi Protected Access)</li> <li>802.11i</li> <li>WEP (128, 152)</li> </ul>	<ul style="list-style-type: none"> <li>AES</li> <li>WPA (Wi-Fi Protected Access)</li> <li>802.11i</li> <li>WEP (128, 152)</li> </ul>	<ul style="list-style-type: none"> <li>AES</li> <li>WPA2 (Wi-Fi Protected Access)</li> <li>802.11i</li> <li>WEP (64 and 128 bit)</li> </ul>	<ul style="list-style-type: none"> <li>AES</li> <li>WPA2 (Wi-Fi Protected Access)</li> <li>802.11i</li> <li>WEP (64 and 128 bit)</li> </ul>	<ul style="list-style-type: none"> <li>802.11i</li> <li>AES</li> <li>802.1x</li> <li>TKIP</li> <li>RADIUS based MAC address</li> </ul>

For detailed technical specifications, please visit <http://www.proxim.com/products/wifi>

[www.proxim.com](http://www.proxim.com)