

# AeroGuard™ MIMO High Performance All Wireless Solution for Manufacturing Plant.

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## CMP Warehouse Application Sypherdata

### Application Scenario:

CMP manufacturing plan of quality metal roofing products is known for its high quality composite metal roofing tiles for industrial applications. The CMP has over 60,000+ sq ft of floor space, including fabrication, office and warehousing space. The manufacturer is undergoing a significant growth period for which it has implemented an inventory control software solution with bar code data entry system to improve efficiency.

There are several data entry terminal, database servers, mobile terminals and order process and management systems most of which are tethered with Ethernet cabling. This is hampering expansion plans and preventing quick relocation of inventory pallets, database servers and other equipment. The factory needs a flexible high performance data communication infrastructure in order to succeed in achieving rapid growth or faces loss of new business. The customer is looking to Sypherdata, a renowned networking reseller, to propose and implement a reliable solution to solve the infrastructural bottleneck.



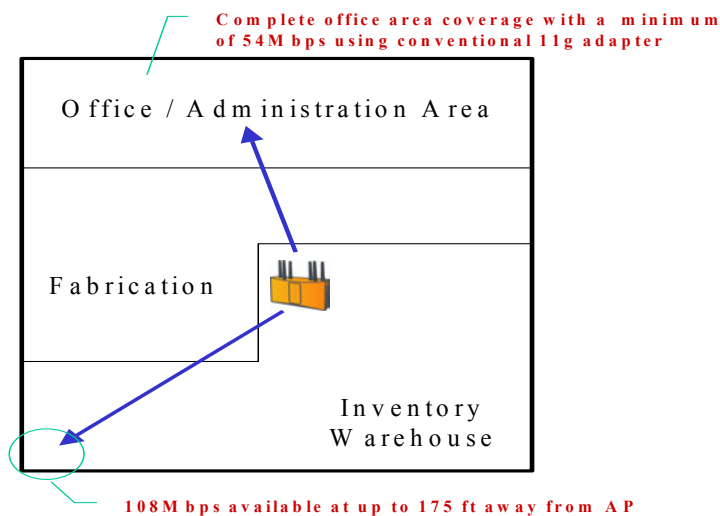
**Figure 1: All Wireless Solution for a Factory**

## Desired Outcome:

One of the primary goals the CMP management team has set up for Sypherdata is to install a robust and reliable wireless network with the highest data throughput possible to link a whole host of wireless data entry terminals (bar code scanners) with the corporate servers and database infrastructure for real-time inventory analysis. This would be a modern high capacity wireless computing environment that would allow the employees to easily look up essential inventory and order processing data and make entries, from throughout the warehouse space, saving valuable time, better process their orders, increase customer satisfaction, and at the same time, cutting order processing cost.

Clearly, the wireless environment must be **secure** and allow access to all resources normally only available through their wired network. The wireless network must be easily scalable without restriction of needing Ethernet cable normally not available through out the facility. It was quickly obvious that, for a fast and cost effective solution, a traditional wireless infrastructure consisting of hundreds of access points was not an option.

What that meant was to **install high capacity access points**, provide adequate system capacity, and include **wireless backhaul option where CAT-5 cables are not** available. The CMP depends solely on Sypherdata for all network management needs. Therefore the solution had to be **manageable from a remote Sypherdata location**, for all aspects of the network, **configuration, security policies, wireless backhaul, user authentication and fault management, and software upgrades.**

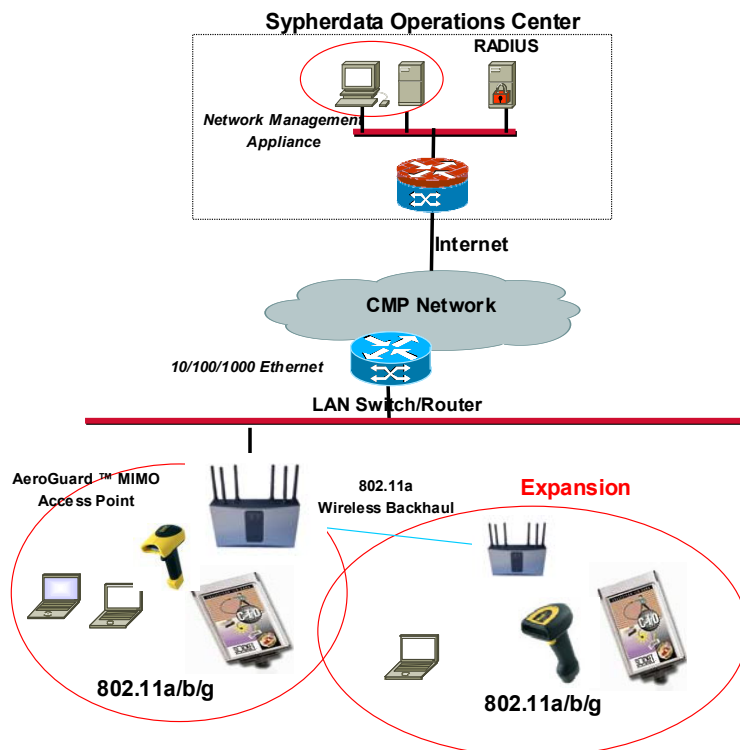


**Figure 2: AeroGuard™ MIMO AP provides extensive coverage**

Having considered various options, the decision was arrived at by Sypherdata that was based on the desire to provide better performance; greater bandwidth, increased range and coverage, and flexibility to expand without the restriction of requiring physical Ethernet cables. Sypherdata selected SOHware's high performance AeroGuard MIMO all wireless fully managed solution for the job.

### **AeroGuard™ MIMO All Wireless Solution:**

As shown in Figure 2 above, one AeroGuard™ MIMO AP was deployed in the center of the plant, which provided complete coverage in the entire 40,000 square feet space at data rates that exceeded 100Mbps using MIMO adaptor card in lap top computers. This provided virtually the wire speed data networking throughout the warehouse and office spaces. The employees were thrilled and the customer was completely satisfied.



**Figure 3: AeroGuard™ MIMO Managed Wireless Network**

A fully managed AeroGuard™ MIMO All Wireless solution, shown in Figure 3 was configured such that each AeroGuard MIMO Access Point with dual radios that are fully backward compatible with standard Wi Fi devices. With

better than **250 feet** coverage and ability to support **50 to 100 users**, the solution required only two access points, far less than predicted with a traditional solution. The AeroGuard™ Network Management Appliance at the Sypherdata's operations center provided configuration, fault, security policy and advanced radio frequency management, and software download capability.

Since there are **two radios in each access point**, it was possible to easily expand the network by assigning one of the radios to use 802.11a channel to **create a wireless backhaul** to the portal access point.

The access points working at 108 Mbps for each radio with a MIMO compatible adaptor cards offered enough resources, i.e. bandwidth, for a variety of the data scanners and hand held devices. However, the **existing Wi Fi client cards** did not need to be replaced and continued to receive the maximum capacity of either 802.11g compliant 54 Mbps, if or 802.11b compliant 11 Mbps.

The solution is IEEE 802.11 standards compliant and utilizes direct-sequence-spread spectrum technology and operating in the 2.4 GHz and 5.3 to 5.8 GHz band. The solution also supports dynamic WEP key, advanced 802.1x authentication. Other features important in this deployment include:

- 802.11i standard compliant security
- Simultaneous backhaul and access point coverage
- Remote configuration, security policy, and fault management
- Built-in 802.1x authentication
- Real-time alarms and traps
- Extensive Radio resource management
- Wi Fi compatible

SOHware understands the need to enable customers achieve their goals through the optimized networking solution that are affordable and yet offer high performance.