

Extricom™ Series LS-3000

Large Scale Wi-Fi Solution

The Allied Telesis Extricom LS-3000 WLAN switch brings the Channel Blanket architecture to very large scale deployments, such as logistics hubs, manufacturing plants, regional medical centers, and hospitality applications requiring high mobility.



The Extricom Series Channel Blanket™ architecture has earned a reputation in the enterprise wireless LAN industry as the “go-to” solution for organizations that want to realize the dream of true seamless mobility, together with wire-like reliability and high throughput, even in the most challenging environments.

Channel Blanket architecture

A Channel blanket is created by assigning the same basic network ID (BSSID) and the same channel to all Access Points (APs) in the service area, which eliminates mobile device handoffs. Each AP comprises multiple radios, each assigned to a different channel, thereby overlaying physically isolated blankets. Mobile devices are served by one ubiquitous access system covering the service area with as many APs as required for coverage and speed. Different blankets can provide different types of service for different groups of mobiles. Capacity grows linearly with the number of blankets.

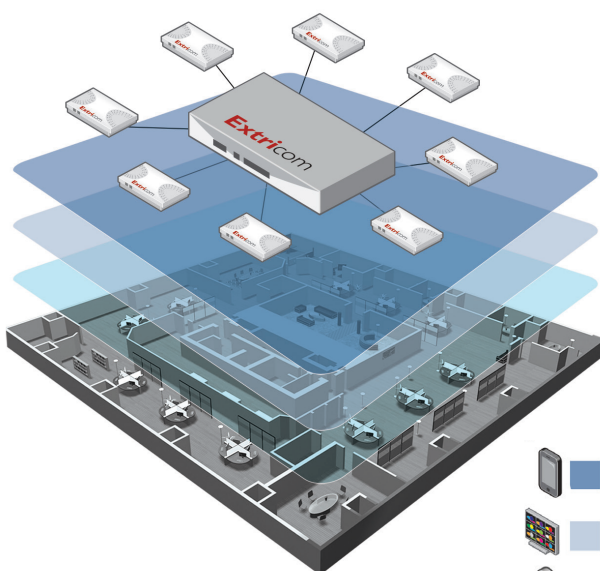
Channel Blanket scalability

In order to provide a single BSSID, most AP functionality is centralized in the wireless switch, which drives many ultra-thin access devices. Each wireless switch port drives a single radio point, delivers power to it and provides for bidirectional connectivity with the radio point. For greater scalability, an AT-EXMS-1000 edge switch is placed between the AT-EXLS-3000 switch and radio points, thereby multiplying the number of APs by a factor of eight. Typically, a 128 AP network is supported with this two-tier switch topology. This tree topology also saves on cabling, as each AT-EXLS-3000 switch to AT-EXMS-1000 switch cable typically serves 16 APs.

The AT-EXLS-3000 is used in verticals such as hospitality, healthcare and logistics, whenever seamless mobility and total wireless coverage is essential. This is specifically crucial for applications such as VoIP or AGV (Automated Guided Vehicles). AGV applications are used in very large logistics warehouses, where automated equipment moves around the floor and aisles.

The Extricom Series Channel Blanket architecture provides a large area of coverage, without the need to roam between APs.

Channel Blanket Architecture



**Simplicity and Performance
without Compromise**

Capacity

High system capacity is achieved by the use of both channel blanket architecture, which eliminates co-channel interference between APs; and the central role of the wireless switch, which controls all system transmissions. Network capacity typically grows linearly with the number of blankets used.

Resilience

The AT-EXLS-3000 uplink port can be aggregated in order to address cable disconnection between the wireless network and the infrastructure. In addition, the AT-EXLS-3000 software supports warm failover between two AT-EXLS-3000 fully overlaid deployments, in cases where any single point of failure is not acceptable. System ‘B’ operates in standby mode, so long as system ‘A’ is functional. Whenever system ‘A’ faults, system ‘B’ commences service on a different BSSID. Once system ‘B’ is functional, system ‘A’ assumes a warm backup role.

Channel load balancing

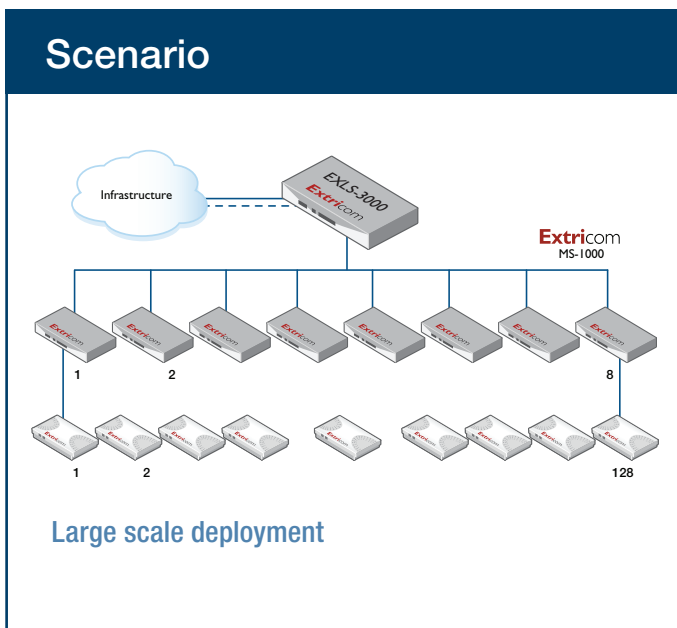
Load balancing between channel blankets may be desired primarily in order to increase total available bandwidth.

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Literally all mobile devices support the 2.4GHz band, but many do not support the 5GHz band. With the blanket architecture it is possible, within the confines of the 802.11 standard, to lure 5GHz-enabled devices to associate with a 5GHz BSS and leave the 2.4GHz band to mobiles incapable of using the 5GHz band. This feature is called band steering. A second balancing technique favors a blanket with a smaller number of users to a blanket with a larger one. Mobile devices are never thrown off the network; the balancing act is based on assigning new mobiles to a less crowded channel blanket when they join the network. This technique is also applicable between blankets in the same band, for example, two blankets at 2.4GHz.

The large scale switch

The AT-EXLS-3000 switch typically drives up to eight edge switches and attaches to the network via one or two IEEE 802.3ad link aggregation ports. Mobiles are associated directly with the AT-EXLS-3000 switch. Network configuration details such as security profile, SSIDs, assigned channels to blankets and VLAN assignments are maintained in the AT-EXLS-3000.



The AT-EXMS-1000 edge switch

Powers up to 16 APs and connects the APs to the Infrastructure through the AT-EXLS-3000. Mobile devices are not managed by the edge switch.

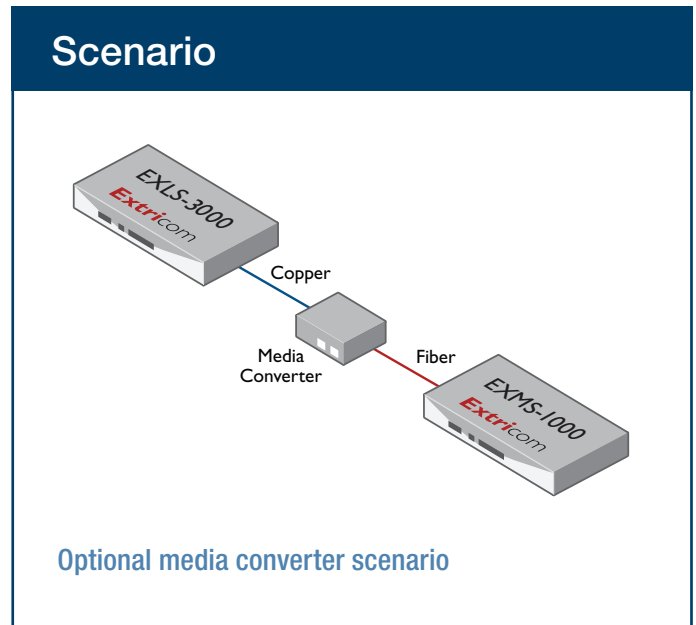
The Access Point (AP)

Extri.com Series APs have up to three radio modules. Each module operates on a different channel providing up to 450 Mbps. The APs are driven by one IEEE802.3z PHY, and support 802.3af Power over Ethernet. Power may be delivered

by either the edge switch or the Extri.com Series range extender on the copper port.

The media converter (optional)

The media converter is a device used to convert between copper Ethernet and fiber Ethernet when required, for example, to extend the reach of the AT-EXLS-3000 to an edge switch beyond the 100m limitation of IEEE 802.11.3z. The total length supported between the AT-EXLS-3000 and the AP is about 400 meters. The total length of copper Ethernet is 100 meters.



The Extri.com CloudBlanket™ Network Management System (NMS)

CloudBlanket NMS is a management system designed to control single to multiple AT-EXLS-3000 deployments from a single network entity. CloudBlanket NMS comprises a server and one or more client devices. CloudBlanket NMS is provided on read-only media with license scaling, according to the number of AP ports required.

Extri.com Series firmware software upgrade

Switch software in both the AT-EXLS-3000 and the edge switch are easily upgradable over TCP/IP to non-volatile memory. This mechanism enables providing new software features to the underlying hardware platform. The firmware requires a license to enable specific features to the installed network.

Compliance

The AT-EXLS-3000 is 802.11a/b/g/n compliant. Any Wi-Fi certified device should be interoperable with an AT-EXLS-3000 deployment.

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Specifications

Standards Compliance

WLAN	IEEE 802.11a/b/g/n IEEE 802.11e/WMM
Ethernet	IEEE 802.3x, full/half duplex IEEE 802.3af Power over

Security

Encryption	802.11i hardware-based encryption for: WEP-64 and WEP-128 WPA-TKIP / AES (CCMP) WPA2-TKIP / AES (CCMP)
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Interfaces

Edge Switch Port	Eight (8) Gigabit Ethernet ports
LAN Ports (Uplinked to wired LAN)	Two (2) Gigabit Ethernet RJ45/ SFP Combo Ports

Regulations Approval

Safety	UL 60950-1 EN 60950-1
EMC	FCC Part 15 class B EN 300386

Physical Specifications

Dimensions (W × H × D)	441 mm × 44 mm × 371 mm (17.4 in × 1.7 in × 14.6 in)
Weight	3.6 kg (7.9 lbs)
Installation options	Rack mount (19 in 1U) and desktop
LEDs	Power LAN activity
Power	100-240V / 5A Max Built in IEEE 802.af injec- tors

Environmental

Operating temperature	0°C to 45°C (32°F to 113°F)
Operating humidity	0% to 90%, non-condensing
Storage temperature	-20°C to 70°C (-4°F to 158°F)
Storage humidity	0% to 90%, non-condensing

Ordering Information

AT-EXLS-3000

Extricom Series Large Scale switch platform, supporting up to 8 MS-1000 switches:

- ▶ 8 x Gigabit Ethernet Edge Switch Ports
- ▶ LS-3000 redundancy
- ▶ 2 x 100/1000 BaseT Ethernet WAN Port
- ▶ 2 x SFP expansion modules
- ▶ PoE for driving EXMC-1000 or EXRE-1000



Related Products

AT-EXMS-1000

16-Port WLAN Switch Platform

AT-EXRP-22n

Extricom access point, 2 × dual-stream 802.11n radios

AT-EXRP-22En

Extricom UltraThin access point, 2 × 802.11a/b/g/n dual-stream radios, connectors for external antennas, metal enclosure

AT-EXRP-32n

Extricom access point, 3 × dual-stream 802.11n radios

AT-EXRP-32EOn

Extricom ruggedized outdoor access point, 3 × dual-stream 802.11n radios, with connectors for external antennas

AT-EXRE-1000

Power over Ethernet (PoE) Range Extender for 100/1000Mbps

AT-EXMC-1000

Media converter (Fiber-Copper; Copper- Fiber)

AT-EXLC-CBNMS-ADV

CloudBlanket Network Management System