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Wireless >

Power over Cat-3 >

Hospitality Broadband IP Networks

sophisticated networks for converged IP services



Motorola technology energizes the existing telephone wire pairs; building sophisticated, powerful networks for new applications and services. A common management framework and unique PowerBroadband technology form the core of the Motorola solution. Field proven and market tested, the T2 PowerBroadband system is the choice of hotel brands and ownership groups since 2006, designed by engineers with over 17 years of experience in digital transmission over copper wires.

This Solution Brief describes network solutions for cat-3 and sub cat-3 UTP telephone wires. Using Motorola technology, any hotel can utilize existing infrastructure for IP-based services.

What is PowerBroadband?

PowerBroadband generically describes technology that delivers two key requirements of an IP network: (1) Power, and (2) Ethernet broadband. Safe, effective and universally applied over telephone grade UTP wire pairs.

Note how PowerBroadband allows each Motorola solution to meet the requirements of hospitality networks.

Power and high speed data operate on one wire pair, co-existing with and transparent to analog telephone signals. A seamless WallPlate (CPE) is easy to install, eliminates disconnects, and improves the guest room aesthetics. Optimized bandwidth, VLANs, and QoS deliver revenue generating HD-IPTV.

PowerBroadband Wireline



Key features of T2:

Adaptive Line Power

T2 line power is transparent to analog telephone signals. The system can be installed on any telephone jack; without rewiring the room. Line power automatically adapts to varying wire conditions to deliver effective power up to 2,000ft (600m.), covering a majority of hospitality properties regardless of landscape.

Proactive Management

Instead of relying on "link up/link down" status, T2 provides an in-depth view of the link parameters; including wire distance, power usage and detailed RF spectrum utilization. Line quality threshold triggers provide proactive management traps, alerting the network administrator before a problem occurs.

Video Optimized

With the emergence of HD-IPTV, managing the network for video delivery is a key requirement - often overlooked by network equipment manufacturers. The T2 is highly optimized to deliver a reliable HD signal and very fast channel zapping. An integrated Layer2+ IGMP routing function reduces network load while zapping a channel in as little as 50msec. Network components within the T2 system are synchronized to support CBR (constant bit rate) or VBR (variable bit rate) video streams.

Advanced VLANs

Port isolation and 802.1Q VLANs can be mixed together, providing powerful and easy to configure privacy. Each T2 WallPlate has an integrated VLAN switch; with 2 or 4 10/100Mb ports. The T2 PowerBroadband Switch supports both port isolation and 802.1Q VLANs.

Service based QoS

Bandwidth requirements can be met by strictly limiting the bit rate per queue; or using a weighted fair queuing algorithm. All parameters can be configured by the network administrator for finely tuned QoS. Four queues per port can be individually configured for Strict Priority (SP), WFQ, and Rate Shaping.

m2 and m4 WallPlate



Motorola introduces the first micro-cell wireless network purposefully designed for hospitality. Powered by the successful T2 PowerBroadband Switch, the MC802 extends universal access to any hospitality guest room.

Automatic RF management and proactive administrative alerts provide 100% coverage with failover redundancy. The tamper-proof, highly integrated micro-cell design allows fast installation while avoiding RF obstacles such as mirrors, fire doors and brick walls.

Wireless and Wireline

Features of MC802 wireless WallPort

Line powered from T2 PowerBroadband Switch

802.11b/g radio

2 x 10/100Mb Ethernet ports

Security Protocols

- o Wireless client isolation
- o 802.1x/EAP
- o WEP, WPA, WPA2, WPA2-Enterprise
- o AES, TKIP encryption

Virtual APs with per SSID (16 SSIDs)

- o 802.1Q VLAN
- o Client isolation
- o Authentication
- o Encryption
- o QoS with WMM voice priority
- o Bitrate

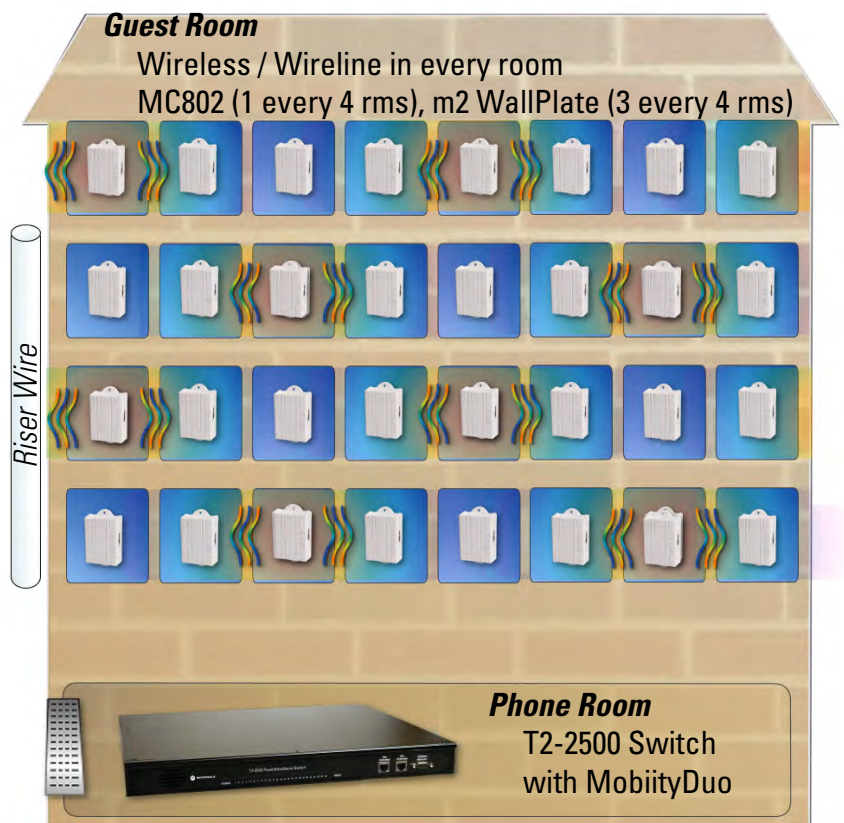
Centralized management

- o Configure T2-802 WallPort from one login
- o Firmware management with backup image and realtime upgrade
- o Automatic RF balancing with manual control
- o Channel selection, Tx power in 1db increments

Other radio parameters

- o Rogue AP detection, configurable scanning
- o Detailed client statistics and status

micro-cell wireless architecture allows any hospitality property to install a 100% wireless/wireline network



The XLP family of products extend class 0/1/2/3 PoE power over a single pair of telephone grade wire. 15.4W is available up to 1,800ft; with available power decreasing over distance. Power is managed and controlled for safe operation and installation.

Hotel applications include line powered VoIP phones over UTP wire, high capacity wireless APs in public spaces, and IP surveillance cameras.

Power over Cat-3 Wire



**XLP-7038
Extended PoE Switch**
1 x RJ45 GigE uplink port
8 x RJ45 UTP downlink ports
1 x db9 serial console



**XLP-701
Extended PoE Client**
1 x RJ11 UTP uplink port
1 x RJ45 PoE Ethernet port
Integrated mounting tabs

XLP-7000 System

Managed, Safe Line Power and PoE

XLP-7000 system operates over a single pair of telephone UTP wire; managing the safe delivery of power and IP connectivity to remote devices. Class-3 PoE (15.4W) up to 1800ft, Class-2 PoE (6.5W) up to 5000ft, Class-1 PoE (3.5W) up to 6000ft.

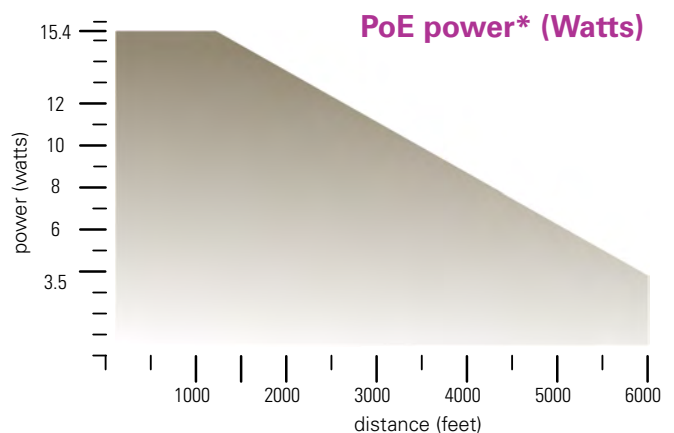
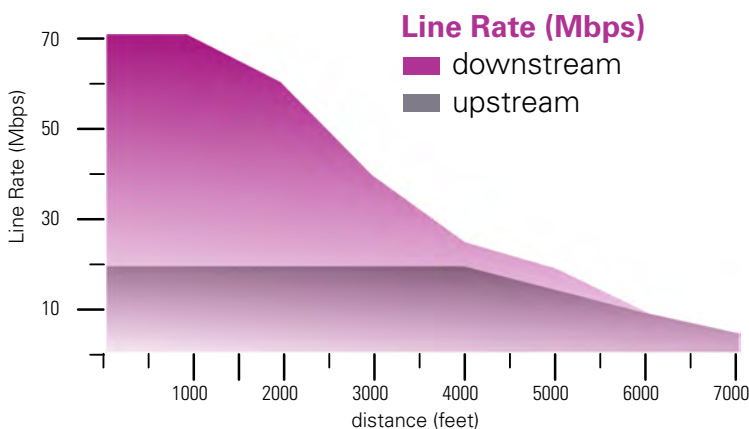
Automatic fault protection, real-time power consumption monitoring, and power priority ensure a reliable, safe, and efficient network.

Proactive Management

Employing the same management system as other Motorola hospitality solutions; the XLP-7000 provides an in-depth view of the UTP wire and link. Monitored parameters include distance, power usage, quality and detailed RF spectrum utilization.

Deployment Scenarios

Deploy VoIP telephony in guest rooms with confidence, using existing cat-3 and sub cat-3 UTP wire. IP surveillance cameras and high powered outdoor access points such as the Motorola AP5131 can be installed anywhere using XLP-7000



* Power for XLP-701 itself is reserved and is not shown on the chart



T2-2500 PowerBroadband Switch

model number: 45125
2 x GigE uplink ports
25 x UTP single pair ports with Adaptive Line Power
Data and video optimizations



m2/m4 T2 WallPlate

model number: 45101/45003
1 x UTP RJ11 uplink ports with Adaptive Line Power
1 x RJ11 phone pass-through
2/4 x RJ45 Ethernet ports
VLANs, QoS and line powered WallPlate CPE



MC802 wireless WallPort

model number: 45010
1 x UTP RJ11 uplink ports with Adaptive Line Power
1 x RJ11 phone pass-through
1 x 802.11b/g micro-cell radio
2 x RJ45 Ethernet ports
VLANs, QoS and line powered micro-cell AP WallPlate CPE



XLP-7038 Extended PoE Switch

model number: 43128
1 x GigE uplink ports
8 x RJ11 UTP single pair ports with extended line power



XLP-701 XLP client

model number: 43001
1 x UTP RJ11 uplink port
1 x RJ45 Ethernet PoE port
Line powered Power Source Equipment (PSE)



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