



**UNIQUE WLAN ARCHITECTURE FOR AFFORDABLE HIGH-SPEED WI-FI IN GUEST ROOMS**

# T5 POWERBROADBAND

## **DELIVER HIGH-SPEED, DEPENDABLE WI-FI ACCESS FOR MULTIPLE DEVICES IN THE GUEST ROOM OVER YOUR EXISTING IN-ROOM PHONE LINES**

Hotels are facing a major challenge: guests expect superior in-room Internet performance on all their mobile devices. Without it, 40 percent of guests — nearly half — say it will impact their decision to return.<sup>1</sup> To further complicate the challenge, more than half of today's business guests travel with three or four devices<sup>2</sup> — including smartphones, tablets and laptops — putting tremendous pressure on your existing wireless LAN. In addition, traditional wireless LAN architecture typically creates areas where there is little or no wireless coverage, forcing some guests to go to the lobby to log on to obtain adequate speeds. As a result, your existing WLAN can't deliver the in-room performance your guests demand, threatening guest loyalty and revenue. While upgrading to a higher-speed wireless LAN would solve the problem, it has been cost-prohibitive — until now.

With the T5 PowerBroadband system from Motorola Solutions, you can cost-effectively deliver high-speed wall-to-wall Wi-Fi coverage inside every guest room in your hotel and expand your wireless network bandwidth to accommodate more devices — without having to install new or rip-and-replace existing wiring. Its unique in-room architecture combines with the ability to utilize existing telephone wiring to bring a new level of affordability to high-performance, high-speed in-room Wi-Fi services that will improve the guest experience — and guest retention.

## **BENEFITS**

### **Cost-effective**

- No CAT5 wiring required — uses your existing telephone wiring
- Integrates with your existing PBX and in-room telephone connections
- Power-over-broadband delivers operating power over telephone wire — there is no power supply to lose or unplug, providing high network availability and uptime
- Fast installation of in-room equipment — all you need is a screwdriver
- Reduce wireless network management time and cost with centralized management of all infrastructure

### **Exceed guest expectations for wireless Internet performance**

- Provides dependable high-speed in-room wireless Internet, even if guests are connecting more than one device
- Improves the guest experience and guest satisfaction
- Helps increase guest loyalty
- Enables revenue generating services in the guestroom, such as IPTV

### **Easy to deploy**

All three elements of the solution integrate with your existing technology and can be installed quickly and easily — no new wiring is required in your main communications room or your guest rooms. In your equipment room, simply connect the TS-524 Power Broadband Switch between your existing guest room telephone connections and your PBX to deliver high speed Internet and IP data services. Replace the phone jack wall plate in one room with a TW-511 Wall Plate Access Point to deliver 802.11a/b/g/n wireless connectivity in that room as well as additional surrounding rooms. The TW-511 also provides an RJ11 port to reconnect the in-room deskphone as well as an Ethernet port for a wired connection to an Ethernet-enabled device, such as a digital television. Last, replace the phone jack wall plate in the surrounding rooms with the lower cost TW-510 to provide each room with its own RJ11 and Ethernet port.

### **Superior coverage and performance in every corner of every guest room**

The T5 PowerBroadband system puts the technology where it will deliver the best possible service — in your guest rooms. With traditional access point-based wireless networks, wireless Internet access in guest rooms is typically served by access points that are installed on either end of the hallway, where distance as well as construction materials — such as heating and air-conditioning ducts — can impact wireless coverage and performance in some of your guest rooms. The T5 PowerBroadband system eliminates these issues with its unique architecture that delivers in-room coverage at its best. Coverage strength inside each guest room is dependable, with no more “dead zones” or fluctuating performance levels that drive guests into other parts of the hotel in search of acceptable Internet connections.

### **Unsurpassed affordability**

The T5 PowerBroadband system is the most cost-efficient way to deliver high-speed wireless Internet in your guest rooms. There is no need to upgrade your copper wire to CAT5 wiring to provide today’s guest

rooms with the fast 802.11n speeds of tomorrow. Since the infrastructure in the rooms is installed by simply replacing the phone plate, the upgrade in the rooms can be completed in minutes with a screwdriver — eliminating complex and costly installations of access points in ceilings on guest room floors. With our unique power-over-broadband technology, neither the TW-511 Wall Plate nor TW-510 Wall Switch will require a power supply if they are installed within 1,500 and 2,000 feet respectively of the TW-524 switch. The result? Your new T5 PowerBroadband system can be up and running in days, instead of weeks or months, and equipment is easily accessible for repairs.

### **Easy to manage**

The T5 PowerBroadband infrastructure integrates with your property-wide Motorola Solutions WiNG 5-based wireless LAN. Just like the traditional access points installed in your lobby, restaurants and other central public areas throughout your property, T5 system infrastructure can also be adopted and centrally managed by your Motorola Solutions RFS 6000 and RFS 7000 controllers, further simplifying initial deployment as well as everyday monitoring and management. You can automatically discover and provision equipment, as well as monitor equipment statistics and status to uncover and address problems before they impact service quality. The snap-on TW-511 Wall Plate is tamper proof — there is nothing for guests or housekeeping to accidentally unplug. And the highly scalable solution can meet the needs of any size property — from a small single building property to a large campus style resort with multiple buildings.

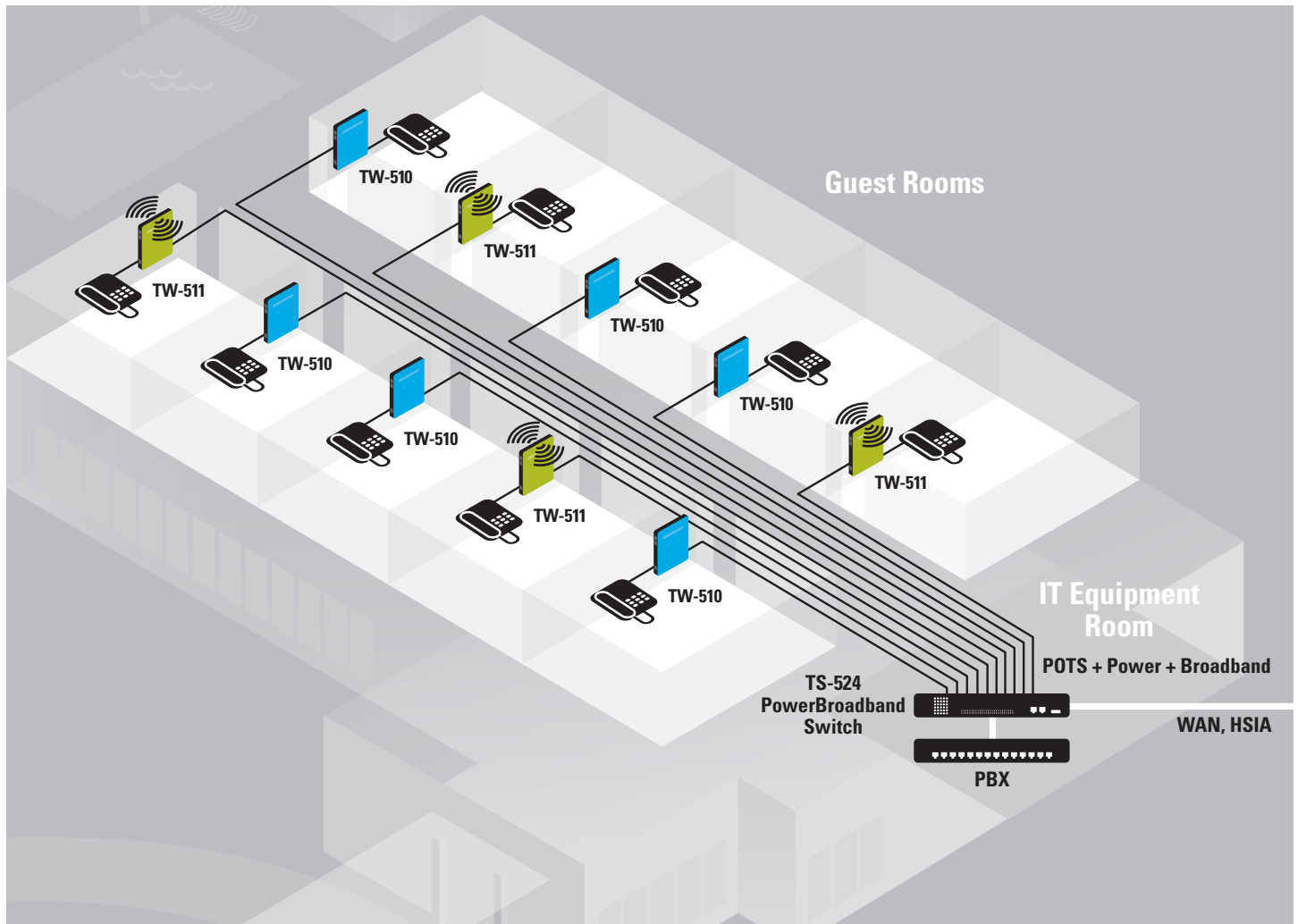
### **Services**

Your guests will count on your T5 PowerBroadband system around the clock. That’s why our optional service offerings include Advance Exchange for advance replacement of devices that require repair; On Site System Support for fast next-day on site service; and WLAN Software Support to keep your software up to date, helping to minimize software-related issues.

## **THE T5 POWERBROADBAND SYSTEM — THE AFFORDABLE WAY TO DELIVER THE RELIABLE HIGH-SPEED WI-FI IN-ROOM SERVICES YOUR GUESTS DEMAND.**

For more information, visit [www.motorolasolutions.com/EasyWiFi](http://www.motorolasolutions.com/EasyWiFi) or access our global contact directory at [www.motorolasolutions.com/contactus](http://www.motorolasolutions.com/contactus)

## T5 PowerBroadband System Architecture



The T5 Power Broadband system allows you to easily and cost-effectively deliver 802.11n high-speed, high-availability wireless network service in your guest rooms over your existing telephone wiring. Simply install the TS-524 PowerBroadband switch between your PBX and the telephone connections in your guest rooms. A single TW-511 Wall Plate replaces the wired phone wall plate in one guest room to provide robust wireless coverage in the room in which it is installed, as well as additional adjacent rooms. The TW-511 has a jack for the wired in-room phone as well as two switched Ethernet 10/100 ports. A lower cost TW-510 Wall Switch provides a jack for the wired in-room phone as well as two switched Ethernet 10/100 ports. Both the TW-510 and TW-511 require only a screwdriver to install, allowing you to upgrade your wireless Wi-Fi network in record time. The result? The high-speed dependable in-room Wi-Fi services your guests expect on all their devices — all at a minimal cost.

# Specifications Chart

## TS-524 SPECIFICATIONS

Ethernet LAN:	2 x 10/100/1000Mb 8-wire RJ45 connector. IEEE 802.3 10/100/1000BTX 24 x single pair UTP, Female RJ21 connector
UTP Interface:	DMT VDSL2, per line rate adaptation Integrated analog POTS splitter
Status LEDs:	System Power UTP ports: multicolor status LEDs Ethernet status: integrated green and amber for link status and link speed
QoS:	Classification: Dynamic IP TOS/802.1P COS, Port based Buffer Management: WRED Transmission Queues: Four queues with administrator defined WFQ, Rate Shaping, Strict Priority
VLANs:	802.1 Q tagged VLANs or port isolation, VID 1-4094
Management:	Access: Serial console, telnet, SSH, HTTP, HTTPS, SNMPv2c, v3 standard and enterprise MIB Security: 20 IP ACL List, Management defined VID, Two-level password protected access, RADIUS authenticated administrator login Other: external syslog function with local log file, SNTP, Two system image banks, 32MB file system

## TW-5XX SPECIFICATIONS

Wireless Interface:	Single radio; 802.11a/b/g/n; 2.4Ghz or 5.2Ghz
LAN Ethernet port:	2 x IEEE 802.3 10/100Mb auto-sensing via 8-pin header
Uplink UTP:	1 x RJ11 UTP, VDSL2
Pass through:	Filtered RJ11 port
Medium:	DSSS, OFDM, MIMO
Standards:	802.11a, 802.11b, 802.11g, 802.11n draft 2.0 802.11i, 802.11-2007
Data Rates:	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6,9,12,18,24,36,48, 54Mbps 802.11a: 6,9,12,18,24,36,48, 54Mbps 802.11n: MCS 0-15 up to 300Mbps
Operating Frequencies:	2.4GHz: 2400 -2483.5MHz 5.2GHz: 5150 - 5250MHz; 5725 - 5850MHz Actual operating frequencies depend on national regulatory limits
Transmit Power settings:	1dBm to 18dBm, in 1dB increments; Actual Tx power dependant on national regulatory limits
Antenna Configuration:	Two internal omni-directional, 1x2 or 2x2 MIMO operation 3dBi peak in 2.4 Ghz; 4dBi peak gain in 5.2 Ghz
VLANs:	802.1 Q tagged VLANs, access or trunk

Management:	Access: via TS-524 Switch for normal operation, HTTP access for site survey standalone operation
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## GENERAL SPECIFICATIONS

Power:	TS-524: 100 – 240V AC, 50/60Hz; 375W max, 250W typical TW-511: Line powered or DC power: 12VDC, 6W TW-510: Line powered or DC power: 12VDC, 4W
Physical:	TS-524: 17.25 in. x16.25 in. x1.75 in. (43.8 cm x 41.3 cm x 4.4 cm) 11.5 lbs (5.2 Kg) TW-5xx: 4.9 in. x3.6 in. x 1.2 in. (124mm x 92mm x 32mm) 12oz (0.34 Kg)
Environment:	0 - 40 degrees Celsius ambient temperature, 5% to 90% NC
Mounting:	TS-524: EIA-19 rack mount ears provided. 90° or 180° rotation mounting options TW-5xx: Wall mount bracket and RJ11 cable
TS-524 Compliance:	EN60950-1:2006+A11; UL60950-1:2007; CAN/CSA-C22.2 No 60950-1-07; IEC60950-1:2001:2005; AS/NZS60950-1:2003+A1+A2+A3; FCC Part15B; ICES-003 issue 4:Class A; EN 55022:2006:Class A; AS/NZS CISPR22:2006:Class A EN 55024:1998+A1:2001+A2:2003:Class A RoHS 2002/EC/95
TW-5xx Compliance:	FCC 15.247, 15.407 / EN300 328, EN 301 893 UL EU EN 60950-1 2nd Ed., ANZ C-Tick FCC Part 15 Subpart A, EN 55022: 2006 + A1: 2007, ICES – 003 (Class A) EN 55024: 1998 + A1: 2001 + A2: 2003 EU RoHS Directive 2002/95/EC CE, IC, FCC

TW-5xx Compliance:	FCC 15.247, 15.407 / EN300 328, EN 301 893 UL EU EN 60950-1 2nd Ed., ANZ C-Tick FCC Part 15 Subpart A, EN 55022: 2006 + A1: 2007, ICES – 003 (Class A) EN 55024: 1998 + A1: 2001 + A2: 2003 EU RoHS Directive 2002/95/EC CE, IC, FCC
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## LINE POWER MAXIMUM RANGE

Distance	Wallplate
500 ft (150m)	TW-510 or TW-511
1000 ft (300m)	TW-510 or TW-511
1500 ft (450m)	TW-510 or TW-511
2000 ft (600m)	TW-510
> 2000 ft (600m)	None (use local power supply)

## LINE RATE PERFORMANCE

Distance	Wallplate
500 ft (150m)	105Mbps down /50Mbps up
1000 ft (300m)	105Mbps down /50Mbps up
1500 ft (450m)	105Mbps down /50Mbps up
2000 ft (600m)	103Mbps down /40Mbps up
3000 ft (900m)	60Mbps down /18Mbps up
4000 ft (1200m)	45Mbps down /5Mbps up

## SERIES DETAILS:

### TS-524

#### PowerBroadband Switch

P/N: TS-0524-WR  
RoHS Compliant  
2 x RJ45, 10/100/1000Mbps  
2 x RJ21, female telco  
1 x dB9, female console port

### TW-510 Wall switch

P/N: TW-0510-WR  
RoHS Compliant  
2 x RJ45, 10/100Mbps  
1 x RJ11, line in  
1 x RJ11, filtered phone

### TW-511 802.11n Wallplate AP

P/N: TW-0511-60010-US  
P/N: TW-0511-60010-WR  
P/N: TW-0511-60010-EU  
RoHS Compliant  
2 x RJ45, 10/100Mbps  
1 x RJ11, line in  
1 x RJ11, filtered phone  
1 x 802.11a/b/g/n, 2X2:2 radio

1 Hotel Wi-Fi: Balancing Budget and Bandwidth”, Hotel Business Review; [http://hotelexecutive.com/business\\_review/3046/hotel-wi-fi-balancing-budget-bandwidth](http://hotelexecutive.com/business_review/3046/hotel-wi-fi-balancing-budget-bandwidth)  
2 Business Travelers Mobile Trends, Lodging Magazine; <http://www.lodgingmagazine.com/PastIssues/PastIssues/Business-Travelers-Mobile-Trends-2579.aspx>