



Wide Area Networking (WAN) with Wireless Technologies

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Agenda

Technology Overview
Deployment Considerations
Simply Wireless Case Studies

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Wireless WAN Technology Options

- Class Licensed Spectrum*
 - 2.4 GHz and 5 GHz
- Licensed Spectrum
 - Cellular, 3G, Microwave
- Free Space Optics
 - “Laser”

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Wireless WAN Overview

- Purpose
 - *To connect multiple sites, offices, buildings or houses with network connectivity.*
- Attributes
 - *High Bandwidth (1Mbps to 54Mbps)*
 - *Long Distance (10m to 15km)*
 - *Single (Initial) Investment*
 - *Quick to Implement*
 - *Comparatively High ROI*
- Limitations
 - *Usually Requires Line of Sight*
 - *May require Development Approval (DA)*



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Wireless Bridge Configuration

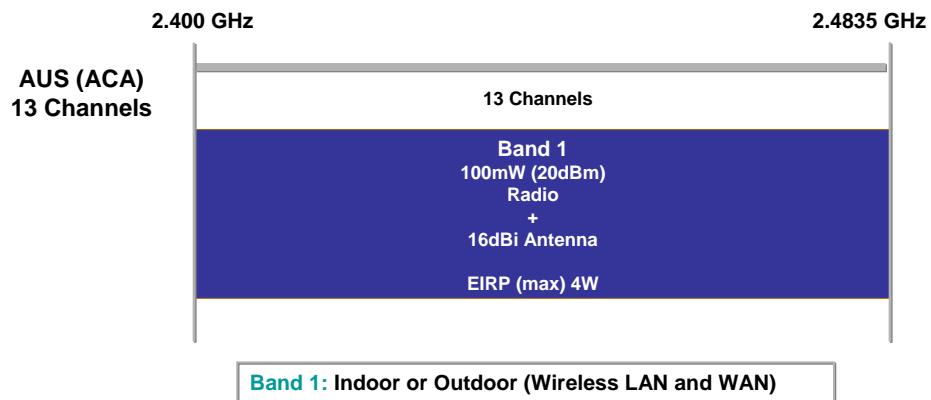
	Point-Point	Point-Multipoint
Speeds	Up to 54Mbps	Up to 54Mbps
Frequency Band	2.4 GHz and 5 GHz	2.4 GHz and 5 GHz
Availability	Worldwide	Worldwide
Duplex	Half and Full Duplex	Half Duplex Only
Distance	15km	5km

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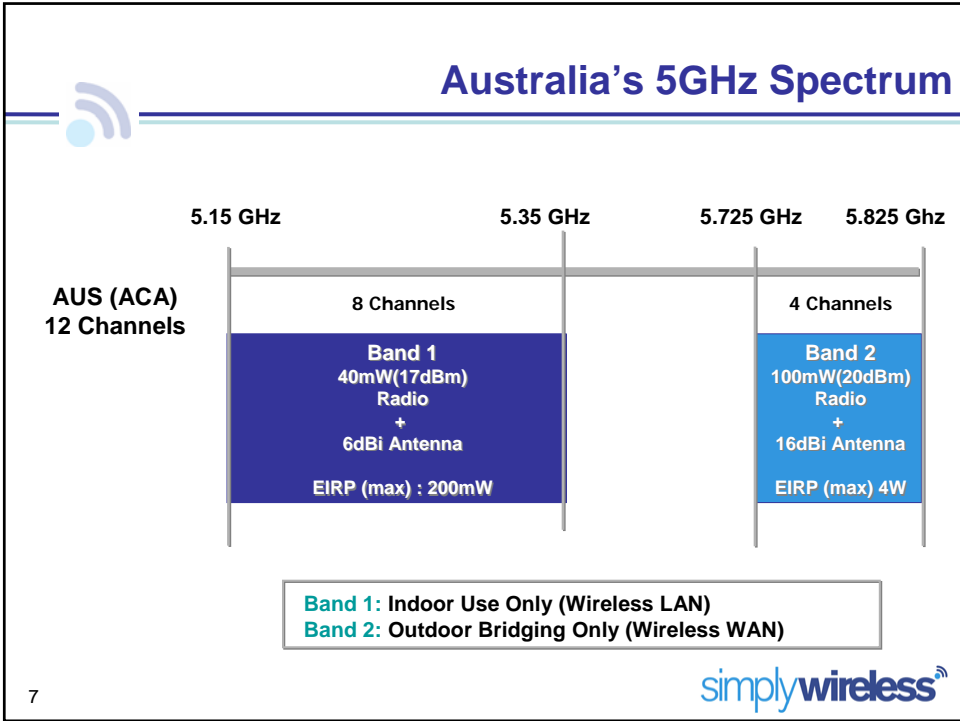


Australia's 2.4GHz Spectrum



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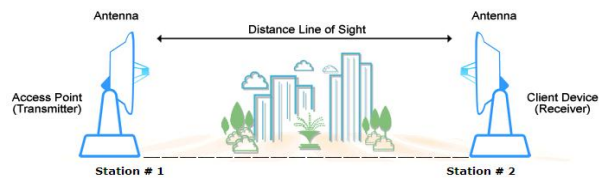
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Site Inspection / Site Survey



- Business Requirements
- Number of Sites
- Location of Links



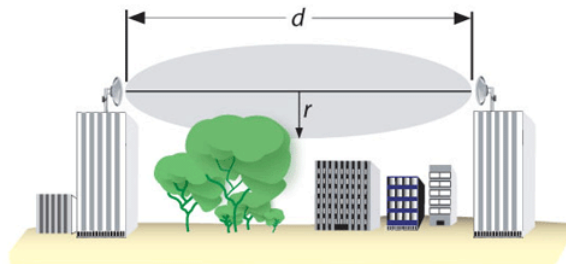
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Site Inspection / Site Survey



- Visibility / Line of Sight
- Fresnel Zone Calculations



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Site Inspection / Site Survey



- Building Ownership
- Rooftop Access
- RF collocation
- Strata Approval
- Development Approval

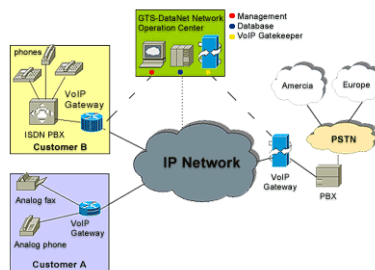
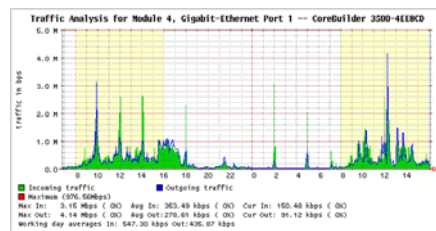
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Site Inspection / Site Survey



- Req'd Bandwidth
- Network Topology
- Management



- Application Usage
- Voice vs. VoIP
- Monitoring

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Site Inspection / Site Survey



- EM / RF Interference
- Weather Conditions
- Existing Bridges (collocation)



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Site Inspection / Site Survey



- Antennae Choice
- Signal Strength
- Signal Quality
- Channel Plan
- Multi-Path Degradation
- Fade Margin
- Network Baseline
- Estimated Availability
- Documentation for Troubleshooting



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Technology Overview
Deployment Considerations
Simply Wireless Case Studies

WWAN Business Case #1



Hospitality Industry, Sydney

Technology & Business Requirements

- One time cost-effective capital investment.
- Replace existing terrestrial lines – expensive and slow Telstra frame relay service.
- Increased user productivity.
- Decreased TCO for IT – centralised and remote IT support across 3 geographical locations.

Conventional Ideology Limitations

- Slow terrestrial lines reduced productivity and incurred high monthly rental fees.
- Given the distance and council regulations, laying fibre was prohibitive.
- Without an innovative solution the company would not be able to achieve its goals.

The Simply Wireless Solution

- Simply Wireless provided an appropriate point-multipoint solution for less than \$45,000 AUD.
- The wireless solution had a three (3) week implementation lead time.
- Return on Investment was sub-nine (9) months.
- No development approval required.
- High Bandwidth solutions allowed for high-speed information sharing.
- Centralised information architecture reduced ongoing information technology costs.



WWAN Business Case #2

Market Research, Sydney

Technology & Business Requirements

- High Speed / LAN Speed (>30Mbps) Connectivity between two (2) office blocks.
- Capable of E1 Transportation or Future Voice over IP (VoIP) Implementation
- SNMP-Compliant for Network Monitoring
- Return on Investment under 12 Months

Conventional Ideology Limitations

- Equivalent terrestrial lines incurred large reoccurring rental fees.
- Given the CBD location and council regulations, laying fibre was prohibitive.
- Without an innovative solution

The Simply Wireless Solution

- Simply Wireless provided an appropriate point-point solution for less than \$55,000 AUD.
- The wireless solution had a eighteen (18) day implementation lead time.
- Return on Investment was seven (7) months when compared with terrestrial options.
- No digging, trenching or development approval required.
- High Bandwidth solutions allowed for a seamless extension of their LAN.
- Centralised information architecture reduced ongoing information technology costs.

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WWAN Business Case #3

Education Market, Sydney

Technology & Business Requirements

- Duty of Care requirements necessitated 24x7 telephony connectivity
- High-speed (>20Mbps) connectivity between five (5) remote buildings was also desired.
- Capable of Voice over IP (VoIP) Implementation
- Support for the extension of their existing VLAN architecture.
- Standards-based Network Infrastructure (802.11x, SNMP, 802.1Q, 802.1p, etc)

Conventional Ideology Limitations

- Equivalent terrestrial (fibre) lines would require significant trenching, laying and termination.

The Simply Wireless Solution

- Simply Wireless provided an appropriate point-multipoint solution for less than \$25,000 AUD.
- The wireless solution had a four (4) week implementation lead time.
- No digging, trenching or development approval required.
- High Bandwidth solutions allowed for a seamless extension of their LAN.
- Increased productivity for boarding masters and students through 24x7 network access.

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Thank You



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