



PRODUCT DATA

Wi-Fi RF Design

CREATE OPTIMUM WI-FI PERFORMANCE WITH THE MOST ACCURATE, HIGH QUALITY DESIGN POSSIBLE TO DELIVER THE MAXIMUM RETURN ON YOUR INVESTMENT



BUSINESSES TODAY RELY ON WI-FI AS A MISSION-CRITICAL RESOURCE TO IMPROVE PRODUCTIVITY AND COMPETITIVE EDGE. BUT LARGE SITES AND ENTERPRISE APPLICATIONS, SUCH AS VOICE AND VIDEO, REQUIRE VERY DIFFERENT SOLUTIONS TO THOSE COMMONLY USED TODAY. ACCURACY OF THE DESIGN IS PARAMOUNT. ONLY A RED-M DESIGN WILL GUARANTEE THE COVERAGE, CAPACITY & QUALITY TO MEET YOUR NEEDS.

WHY CONSIDER A RED-M DESIGN?

A Red-M Wi-Fi RF Design should be a key component of your wireless networking strategy because:

- Inaccurate design creates higher costs, increased business risks and ongoing technical problems
- Enterprise Wi-Fi design is not easy, it is a complex process that demands precision and expertise - 'best guess' Access Point (AP) placement will not work properly
- Wi-Fi has 3 aspects: RF, Physical and IT. RF is the foundation and, unless the RF design is accurate, even if you use self-adjusting APs, applications won't work as desired

Red-M addresses these key issues...

WHAT WILL A RED-M DESIGN GIVE ME?

A Red-M Wi-Fi RF Design is the foundation of a fully optimised, future-proof Wi-Fi infrastructure:

- The network works right - first time, every time
- Total confidence - our design is based on measurements of a site's RF propagation characteristics: the best way to develop a solution
- Guarantee the required levels of:
 - Coverage - no black spots, holes or dead zones
 - Capacity - maximise performance for all applications and users
 - Quality - minimise interference with correct installation and set-up

APPLICATIONS AFFECT DESIGN

ENTERPRISE APPLICATIONS INCLUDE:
VOICE-OVER-IP
VPN/REMOTE DESKTOP - E.G. CITRIX
DYNAMIC INTERNET USE - E.G. STREAMING VIDEO
CLIENT/SERVER - E.G. SQL SERVER
CCTV
VIDEO CONFERENCING
STANDARD APPLICATIONS INCLUDE:
E-MAIL
PRINTING
NORMAL 'STATIC' INTERNET USE
OFFICE-TYPE APPLICATIONS
GENERAL FILE SERVER ACCESS
EOPS (CHIP-AND-PIN), RFID, BARCODE SCANNING
An Enterprise RF design will also support Standard Applications

Two major factors affecting Wi-Fi design are the size and nature of the building, and the applications in use on the network. Enterprise Applications require a different, more complex RF design than Standard Applications. It is how applications communicate over the network that determines their classification. Some easy-to-use applications conceal hidden networking complexities from the user.

COMMON WI-FI TECHNICAL CHALLENGES

There are four key factors:

- **Mobility** - seamless connectivity between Wi-Fi cells requires cell overlap, switching time and channel usage to be optimised
- **In-Building** - different structures and materials seriously affect Wi-Fi signals: for example, the design needs to account for reflection & attenuation
- **Applications** - getting the right coverage is difficult: too few APs means poor connectivity, too many APs causes interference and degrades operation
- **Conflict** - Wi-Fi shares frequencies with other low power and unlicensed devices, so any solution needs to avoid potential interference problems

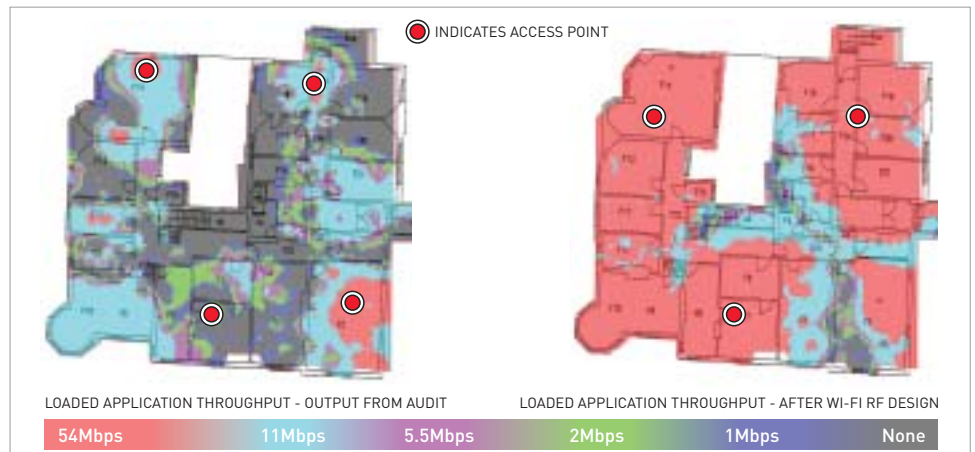
All this points to the need for a high precision approach to network design* - which is what Red-M delivers.

WHAT DOES A RED-M DESIGN INVOLVE?

Our design methodology comprises four distinct phases:

- **Confirm requirements** - precise definition of needs and objectives
- **Site visit** - highly accurate data capture to precisely establish site RF propagation characteristics
- **Data processing** - experts translate the findings into a tailored solution using our patented planning software
- **Design report** - detailed solution within seven working days of site visit

*It is recommended that a Red-M Wi-Fi RF Audit is commissioned prior to a Wi-Fi RF Design to establish all baseline parameters.



A Red-M Wi-Fi RF Design Report contains clear and easy to understand pictures illustrating the proposed network design. An Audit found loaded application throughput was poor (seen by the green & purple areas on the left) so Red-M carried out a Wi-Fi RF Design. Amongst many improvements, throughput is now excellent as shown on the right by the abundance of the colour red.

WHAT ARE THE DESIGN OUTCOMES AND DELIVERABLES?

A network design report that contains all vital data and graphically enhanced proposals to support large sites or Enterprise Applications:

- **Design proposals** - a detailed plan showing AP location and coverage
- **Design results** - all key performance data, such as signal strength, resilience, throughput and connectivity are illustrated
- **Implementation** - AP installation advice plus recommended network settings such as channel frequency plan, power settings, antenna types
- **The design is individually optimised** to your precise requirements, applications & building environment

WHAT ARE THE BUSINESS BENEFITS?

Leveraging our in-depth expertise and track record of 100s of successful wireless implementations, a Red-M solution delivers tangible, competitive edge benefits for your business:

- **High user productivity** - consistently and without fail because the network works now and in the future
- **Cost efficiency** - accurate design means less wastage and more performance
- **Mobile, flexible employees** - who can work more effectively and efficiently
- **Simplified effective management** - maximise use of resources with less problem solving
- **Maximum Return on Investment**

Independent of equipment vendors and technologies, Red-M enables organisations to fully realise the benefits of wireless systems by delivering high quality solutions through an integrated, five-step cycle of best practice:

1. CONSULTING

Defining exactly how, when and where wireless will be used.

2. AUDIT

Understanding what is happening and developing a design baseline.

3. DESIGN

Optimum wireless performance from a design that works right, first time.

4. IMPLEMENT

A non-disruptive installation using best-of-breed technologies.

5. MANAGE

Maintaining a healthy network that continues to meet your needs.



CORPORATE OFFICES

Graylands, Langhurstwood Road, Horsham, West Sussex, RH12 4QD, UK
t: +44 (0) 1403 211100 f: +44 (0) 1403 248597

For more information visit www.red-m.com or email info@red-m.com

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