In-Building Cellular and Wireless Technology

3000 Active Wideband DAS for Unified Multi-Service Wireless Coverage

The Zinwave 3000, the only TRUE WIDEBAND RF over fibre distribution system for In-Building Wireless Coverage, with all Wideband components end-to-end, offers an innovative, cost effective solution for all your wireless services requirements. It provides simultaneous support for any number or combination of multiple services, enabling seamless wireless communications in indoor environments

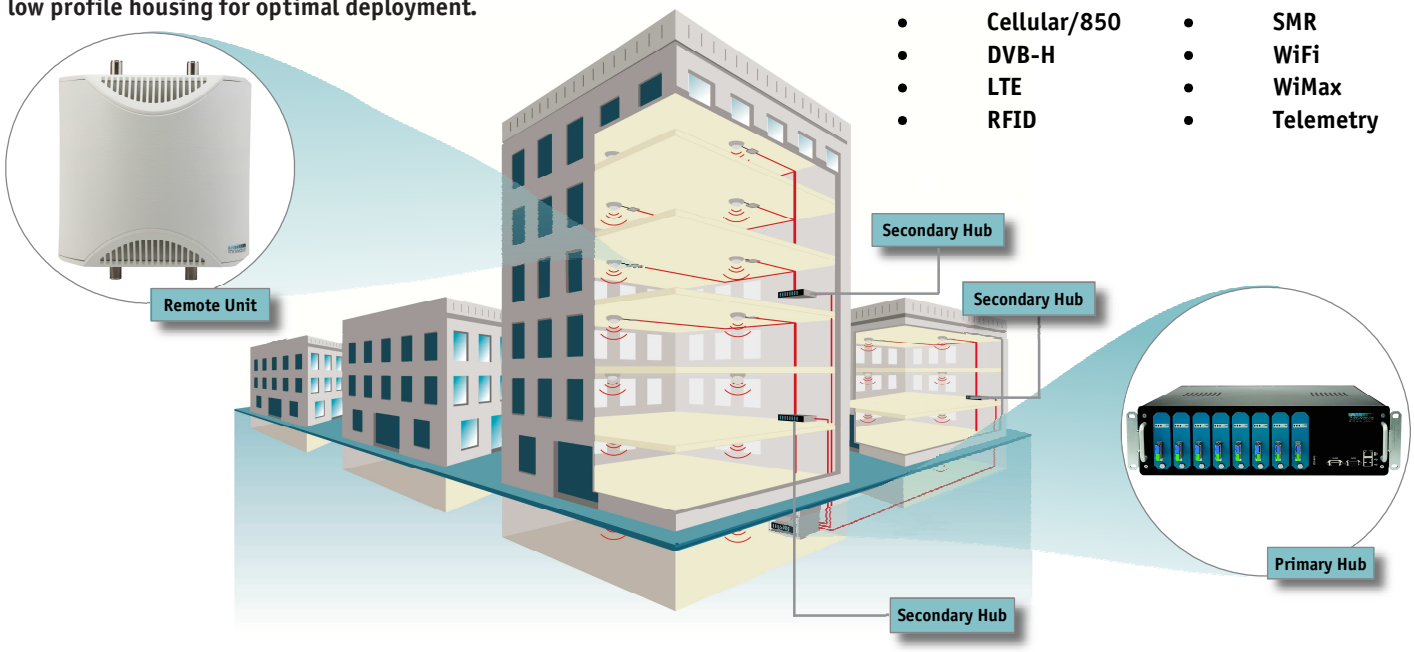
Further, Zinwave's Innovative Wideband Active DAS is the only fibre distribution system that can utilise any fibre installed base, including MMF over long distances with its patented technology.

Zinwave 3000 offers a double or single star DAS architecture from the same elements, comprising Primary Hubs (PH), Secondary Hubs (SH) and Remote Units (RU). All the elements have the flexibility to connect using either SMF or MMF. The RU connection can be via SMF, MMF or coaxial cable. The RUs have sufficient power levels to provide optimum economic coverage areas. Zinwave also offers a dual port antenna in a single low profile housing for optimal deployment.

Benefits	Zinwave: True Wideband End-to-End
Multiple Services	One installation, one set of hardware, no paralleling or multiple service modules or cable overlays
Service Independent	Supports any number of required services irrespective of carrier frequency or protocol (136 to 2700 MHz)
Future Proof	Eases expansion, and guards against future frequency allocations and migrations
Easy Planning & Design	Flexible, simple architecture, easy to design with, automated configuration, and system set-up. Unique service distribution feature
Highly Cost Effective	Lowest cost per sq ft: low component count, lowest cost planning & installation
Flexible Connectivity	Fibre agnostic - MMF or SMF, RU link uses Fibre or Coax. Uniquely utilises any fibre installed base

Any service in the 136 to 2700 MHz frequency range is covered, including:

- GSM900
- GSM1800
- UMTS
- Cellular/850
- DVB-H
- LTE
- RFID
- PCS/1800
- AWS
- LMR
- SMR
- WiFi
- WiMax
- Telemetry

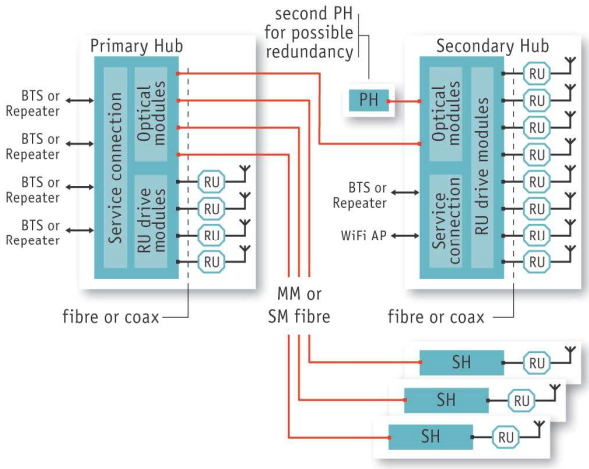


Flexible Scalable Architecture

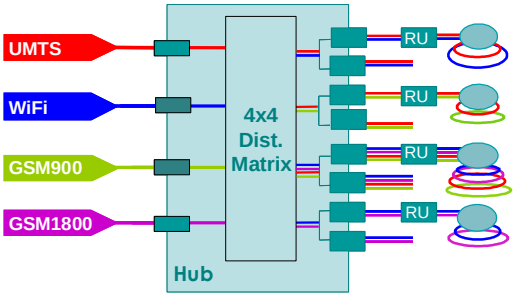
The PH can feed RUs and SHs simultaneously giving extra flexibility which, when combined with Zinwave's unique service distribution capability, allows service and carrier sectorisation.

- A small system can be deployed using a single hub and up to 8 RUs.
- Larger systems are designed by cascading hubs to give a system capability of up to 64 RUs from a single PH.
- Secondary Hubs can accept local service injection within the frequency range, which is particularly useful for local WiFi service injection.
- The hubs allow flexible service distribution as the input signals can be dynamically routed to the output ports using the unique Hub distribution matrix, controlled via the Management System.

Full Architecture Capability



Unique Distribution Matrix: service routing example



Easy Planning and Installation

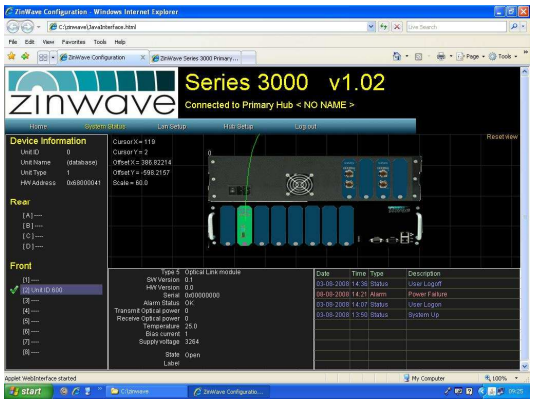
The Zinwave 3000 system implements key features for simplifying planning and installation therefore making it a highly cost effective option.

- Self calibration for cable/fibre loss compensation.
- System gain automatically set up to provide desired output per service to the RUs.
- Uplink gain adjustable for optimising sensitivity and dynamic range for best performance in any radio environment.
- Plug & play hot swap modules, can be added when needed and automatically detected and configured.

Management System

The Zinwave 3000 system provides a built-in Element Management System (EMS), for centralised monitoring, and configuration.

- User friendly intuitive Web based GUI interface.
- SNMP interface for integration into higher level NMS systems.
- Separate user classes and secure communication via SSH/SSL and secure SNMP v3.
- No management controller unit and no propietary software required to view and monitor your DAS installations, other than a standard Web interface.



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