

SIEMENS

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WiMag Flex Architecture

Unlocking additional flexibility for wireless
vehicle detection

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The WiMag Flex Architecture introduces several new pieces of equipment to support Siemens Mobility's existing wireless vehicle detection solution:

- WiMag FlexNode Repeater
- WiMag FlexControl
- WiMag FlexIsolator
- WiMag Digital Radio
- WiMag 2U 19" FlexRack
- WiMag 3U 19" FlexRack

Flexibility in design

As with all traffic signal installations, the design of the detection system is key to enabling an efficient and safe junction; Siemens Mobility's WiMag system is no exception. In-ground detectors, pole-mounted Access Points and Repeaters are all designed-in expertly by trained traffic signal design engineers. To further broaden the design options available, the advent of the line-powered FlexNode Repeater with omni-directional antenna allows for greater flexibility in providing connections to other WiMag equipment.

Reduced cabling

Typically, for larger WiMag installations, 3-4 Access Points would be installed along with their associated ethernet cabling that is pulled through the site's ducting. The

FlexControl module condenses the access point technology to a single unit mounted within the controller cabinet. In conjunction with the FlexNode Repeater, which is powered by spare traffic signal cores and installed at previous Access Point positions, a significant decrease in the amount of required cabling is seen when implementing this WiMag solution.

Simplified configuration

The FlexControl module establishes overall time synchronisation, manages and transmits configuration to other devices whilst processing data received from Repeaters and WiMag detectors. Supporting this, the FlexIsolator serves as electrical isolation, surge protection and AC power cross protection for the FlexControl module and up to two WiMag Digital Radios that function as antennas.

In previous WiMag systems, multiple configurations were required where all Access Points would be configured individually by connecting to each unit. By moving the access point technology to a single element inside the traffic controller, only one configuration is needed, resulting in easier and quicker setup for installation and configuration engineers.

Seamless integration

Two equipment racks are available to mount the controller related architecture neatly within the cabinet:

- Larger sites with an ST950, ST750ELV or ST900 controller can make use of the WiMag 3U 19" FlexRack that contains all controller mounted equipment and support for up to 60 detectors.
- Similarly, for new and existing sites using WiMag Loop Detector Replacement interface cards, a 2U 19" FlexRack accommodates the associated equipment within a Siemens Mobility controller cabinet.





Technical Specifications:

WiMag FlexNode Repeater

Dimensions	
Repeater	241mm x 142mm x 101mm
Omni Antenna	165mm x 89mm x 89mm
Power Supply	9V to 24V DC line powered
Power Consumption	< 50mW
Range	
Internal Antenna	250m
External Omni Antenna	60m
Operating Temperature	-40°C to +80°C
Weight (including antenna)	0.62kg
Frequency Band	2400 to 2483.5 MHz
Ingress Protection Rating	IP67

WiMag FlexControl

Dimensions	109mm x 88mm x 30mm
Power Supply	9V to 28V DC
Power Consumption	< 700mW
Operating Temperature	-40°C to +85°C
Weight	0.24kg

WiMag FlexIsolator

Dimensions	109mm x 88mm x 30mm
Power Output	15V DC unregulated 2W
Power Consumption	600mW per Digital Radio
Operating Temperature	-40°C to +85°C
Weight	0.22kg
Surge Protection	IEC 61000-4-2 (ESD) ±15kV (air) ±8kV (contact) IEC 61000-4-4 (EFT) 40A (5/50 ns) IEC 61000-4-5 (Lightning) 12A (8/20µs)
Electrical Isolation	2500Vrms

WiMag Digital Radio

Dimensions	120mm x 90mm x 60mm
Power Supply	4.5V to 28V
Power Consumption	< 150mW
Range	250m
Operating Temperature	-40°C to +85°C
Weight	0.4kg
Frequency Band	2405 to 2483.5 MHz
Ingress Protection Rating	IP68

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