



# NXC5500/2500

Version 4.21

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## Application Note

### Dual-optimized Antenna Switch

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## Dual-optimized Antenna Switch Introduction

- What is Dual-optimized Antenna Switch?

Today, most access points in the market are designed with single static radiation pattern, typically for ceiling-mount. When an AP with ceiling-mount pattern is installed in a wall-mount scenario, its signal coverage does not fit the wall-mount deployment. Adapting an AP with external antenna may be an alternative option. However, external antenna installation requires know-hows for antenna selection, and it would seem awkward for interior decoration.

The WAC6103D-I is an 802.11ac AP designed for dual-way installation of wall and ceiling-mount. Its dual-optimized antenna allows pattern optimization to adapt to both the wall and ceiling-mount installations. The installation technician can instantly change the antenna pattern via the physical antenna switch without rebooting the device. If needed, administrators can perform granular signal optimization per floor plan via software configuration remotely. With this flexibility, the WAC6103D-I easily fits wall-mount or ceiling-mount deployment without the hassles of antenna selection and signal coverage adjustment.

- This Technology helps:

The dual-optimized antenna allows radiation pattern to be changed manually by adapting to versatile installations, thus delivering benefits such as:

- ◇ Coverage Optimization
- ◇ Dead Spots Elimination
- ◇ User Experience Improvement

## Terminologies of Dual-optimized Antenna Switch

- Physical Switch

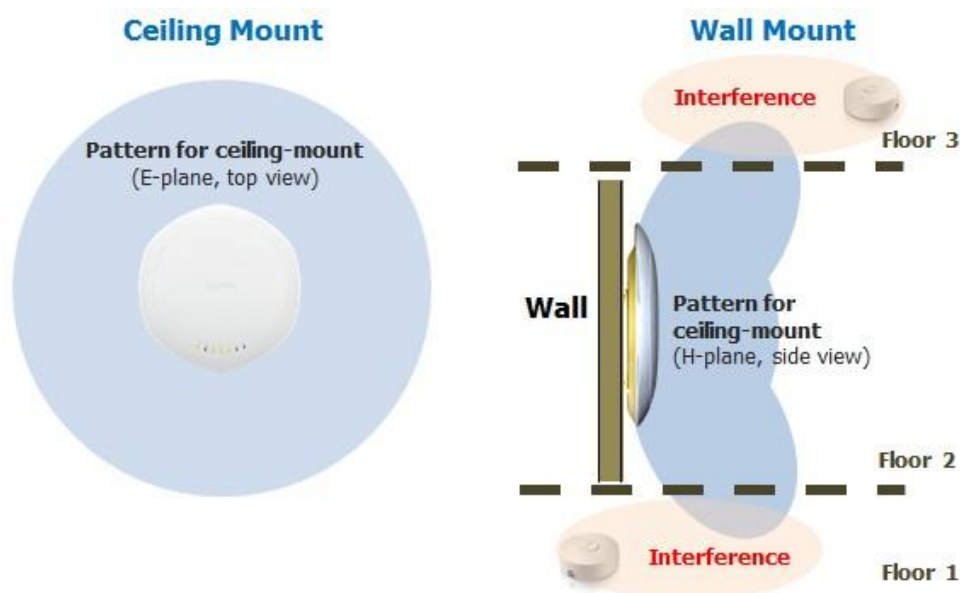
Provide a dip switch at the rear side of the WAC6103D-I AP for pattern selection between wall-mount or ceiling-mount installation. By default, the setting is ceiling-mount.

- Software Configuration

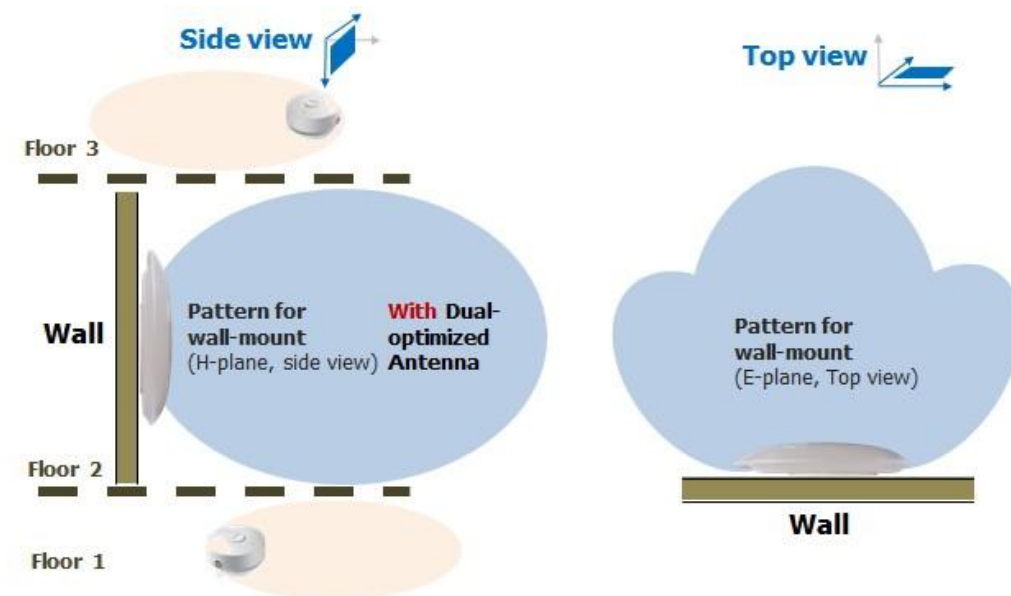
Software configuration replaces a physical switch to allow remote antenna pattern adjustment.

## How Does It Work?

When you install a ceiling-mount designed AP on a wall, the strengthened signals become interference to the upper and lower floors.



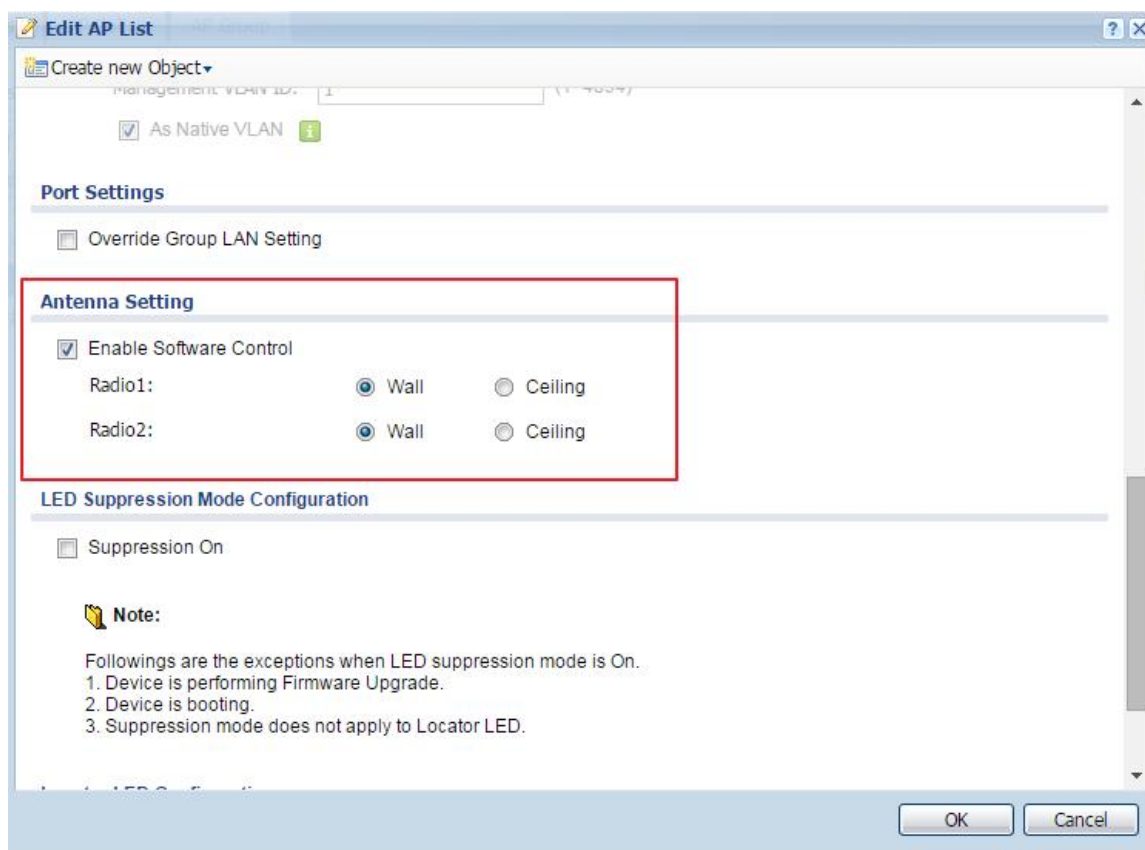
The WAC6103D-I wall-mount pattern focuses the signals to the front end to eliminate interference to other floors.



## Configuration

- Controller/Managed AP

Web GUI Configuration Path: CONFIGURATION > Wireless > AP Management



Check the Current Status

Path: MONITOR > Wireless > AP information > Radio List

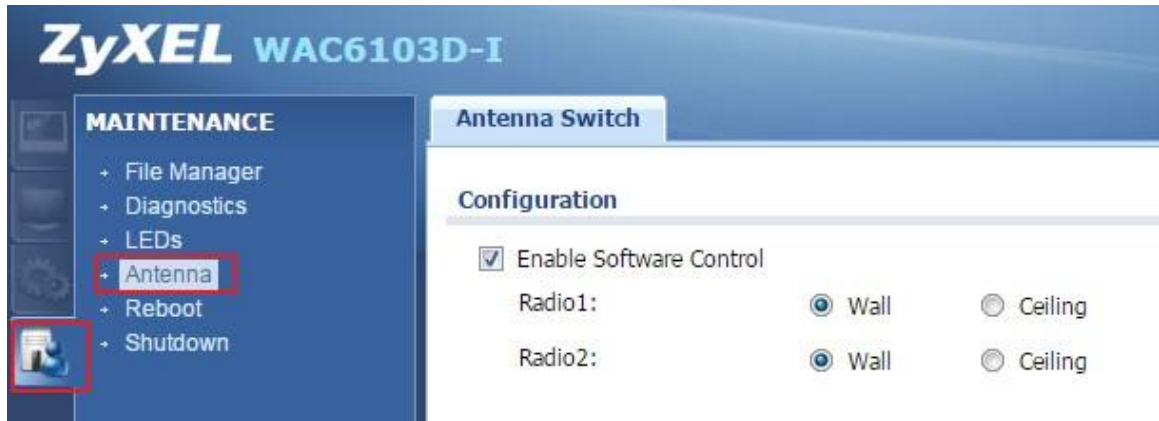
The screenshot shows the ZyXEL NXC2500 web interface. The left sidebar contains a 'MONITOR' menu with options: System Status, Wireless (expanded), AP Information (selected), ZyMesh, Station Info, Detected Device, and Log. The main content area has tabs for 'AP List' and 'Radio List'. Below the 'Radio List' tab is a table with the following data:

#	Loading	AP Description	Antenna	Frequency Band	Channel ID
1	-	AP-A0E4CB84B912	Wall	2.4GHz	6
2	-	AP-A0E4CB84B912	Wall	5GHz	36/40

Below the table, there is a pagination control showing 'Page 1 of 1' and 'Show 50 items'.

- Standalone AP

Web GUI Configuration Path: MAINTENANCE > Antenna



Check the Current Status

Web GUI Path: MONITOR > Wireless > AP information > Radio List



- The WLAN LEDs indicate the real-time antenna pattern status



WLAN LED	Antenna Pattern	LED Color
2.4GHz LED	Ceiling-mount	Green
	Wall-mount	Amber
5GHz LED	Ceiling-mount	Green
	Wall-mount	Amber