

# AM Planner: Creating a Custom Antenna Pattern

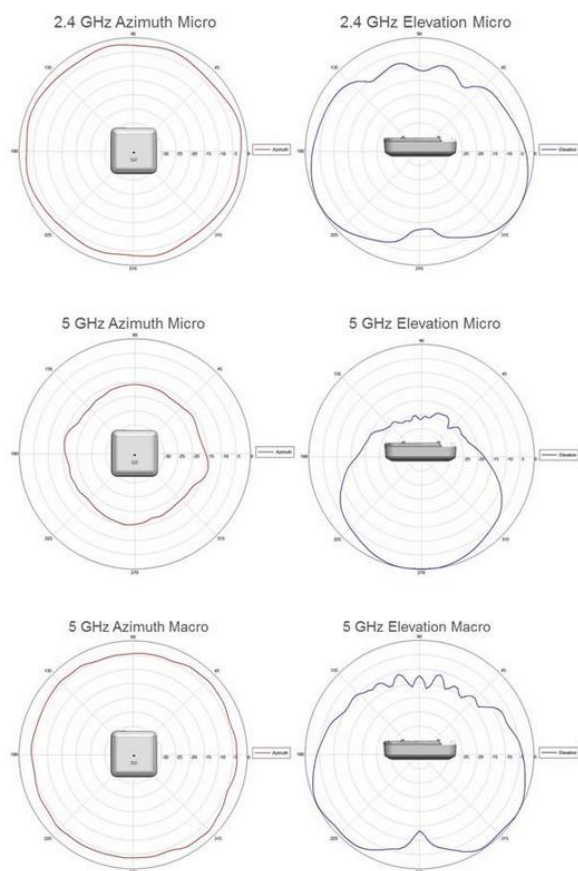
Last Updated: Mar 05, 2018 03:03PM MST

Because antenna manufacturers continually create new antennas, it is not possible to have all azimuth and elevation patterns predefined within AirMagnet Planner's Antenna Manager. Because of this, AirMagnet Planner allows users to create custom antenna patterns. This will enable AirMagnet Planner to accurately project the desired antenna pattern.

From time to time, we also release antenna patterns into your My AirMagnet account and bundled with new releases. You can click on PLANNER ANTENNA PATTERNS in your My AirMagnet account (in the left sidebar) for any new patterns we may have released.

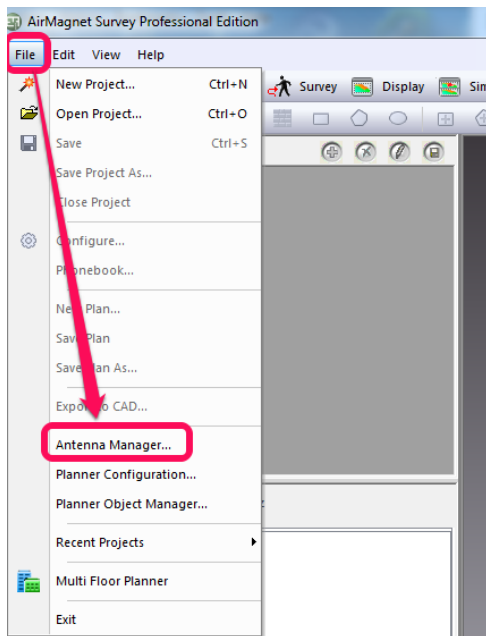
## Obtain the Antenna Pattern from the Manufacturer

The first step and probably the hardest, is to find the manufacturer's antenna azimuth and elevation radiation pattern. Without this information, it will not be possible to accurately create the antenna pattern manually within Planner. Please contact your AP's manufacturer to obtain the access point or antenna pattern directly from them. They should send you something that looks like this (in this example, the Cisco 2800 series):

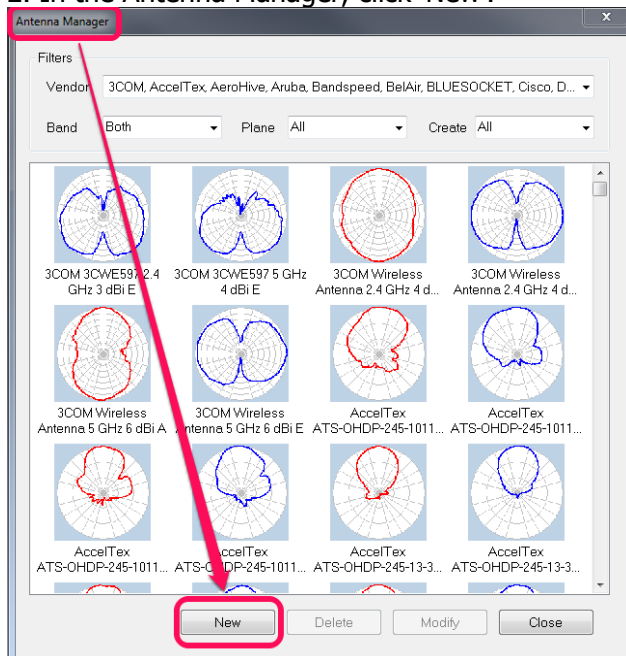


## Create the Pattern within Planner

1. Now that you have the pattern, open AirMagnet Survey PRO or Planner, click the Planner tab and then open File > Antenna Manager.



2. In the Antenna Manager, click 'New':

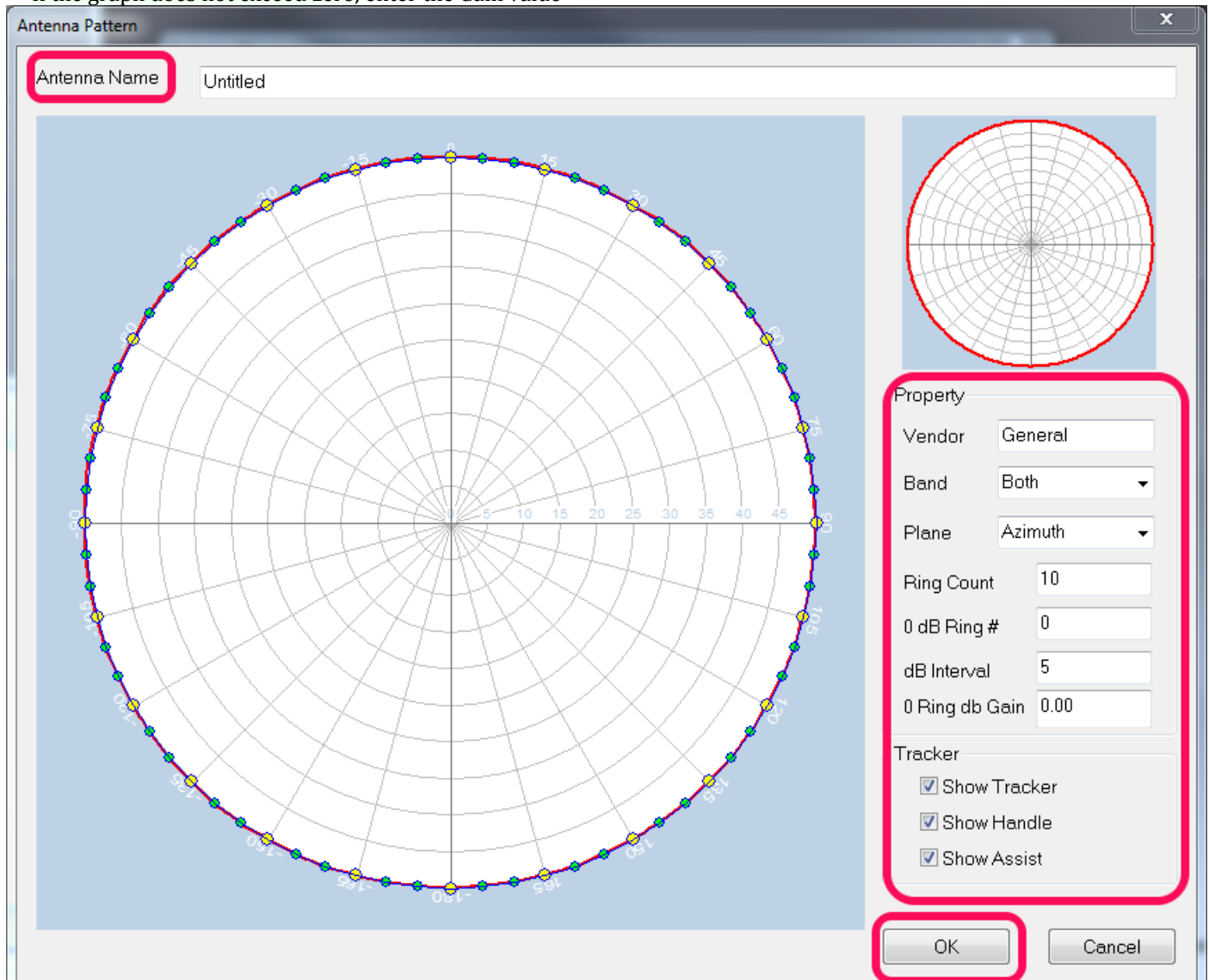


**Note:** When planning to create a new antenna pattern, it might be easier to start by using an existing pattern that is similar to the one you are creating. To do so, select a similar pattern shape from the list of antenna patterns in the Antenna Manager and click New. The new antenna pattern will be based on the pattern you selected.

3. Enter the following:

- **Antenna Name:** This will show up as the display name
- **Vendor:** The manufacturer of your antenna or access point
- **Band:**
  - Both (for 2.4 and 5.0 Ghz)
  - 2.4 Ghz
  - 5.0 Ghz
- **Plane:**
  - Azimuth (horizontal)
  - Elevation (vertical)
- **Ring Count:** Modify the number of concentric circles displayed in the product antenna diagram. Include the outermost ring.
- **0 dB Ring #:** Modify the number of rings from the center to the 0 dB ring

- dB Interval: From the product antenna diagram, modify the dB interval between each ring.
- 0 Ring dB Gain: From the product antenna diagram, if the graph reaches peak gain at any point, enter 0
- If the graph does not exceed zero, enter the Gain value

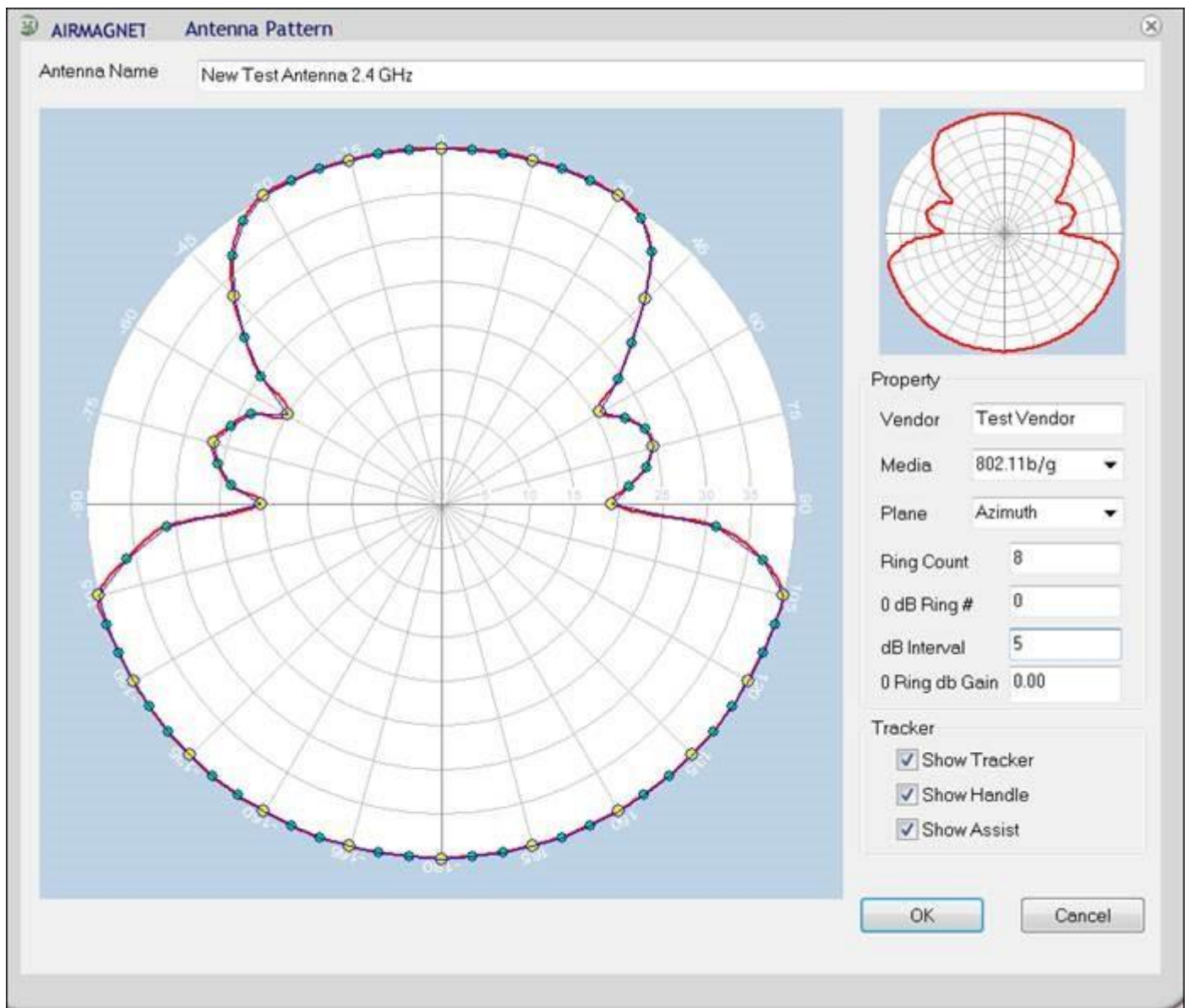


Adjust the antenna pattern drawing by dragging the Handle and Assist points as needed.

- Handle points (yellow points) allow for larger changes
- Assist points (blue points) enable fine-tuning the drawing.

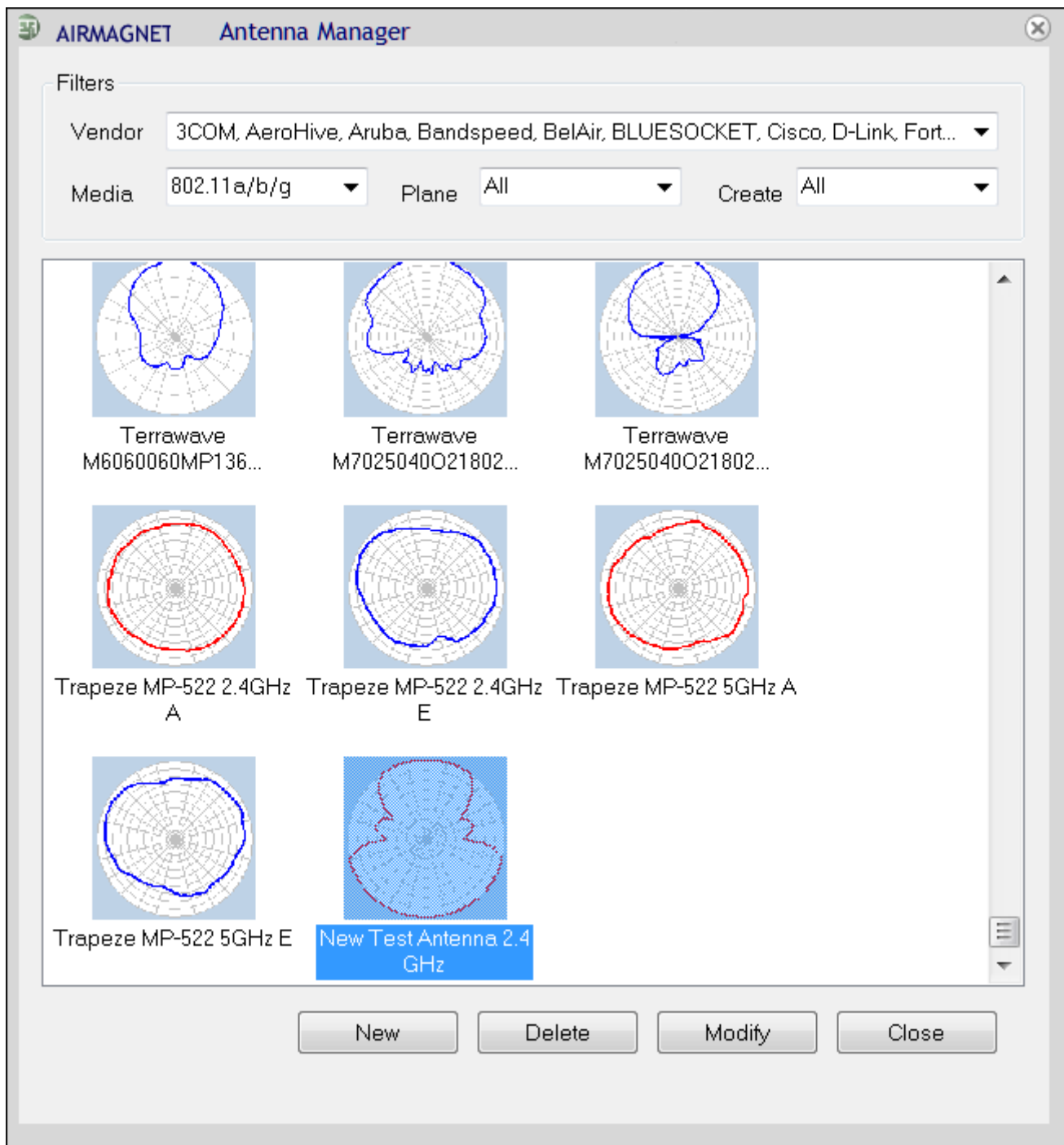
Ideally, this pattern should match the Azimuth and Elevation pattern from the manufacturer. This does mean some time will be spent on accuracy but once completed, it will be a part of the antenna list.

**Note: this is a completely made up antenna pattern just for demonstration purposes:**

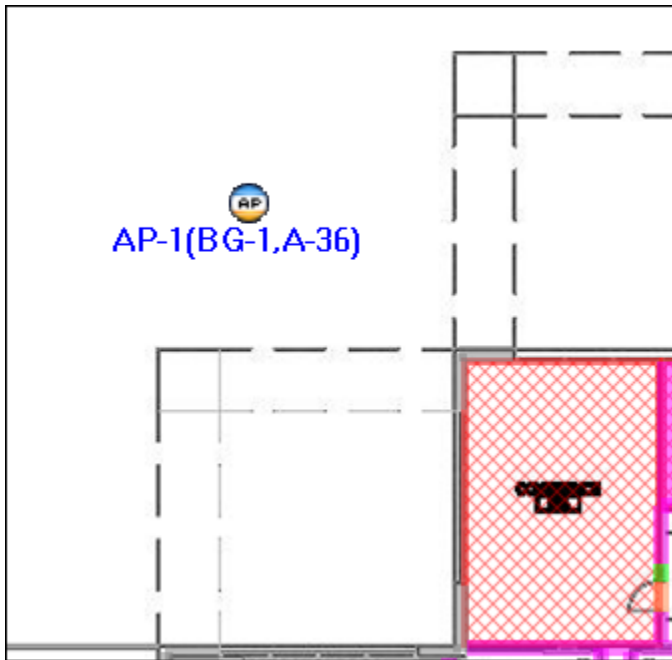


4. Click 'OK' to save.

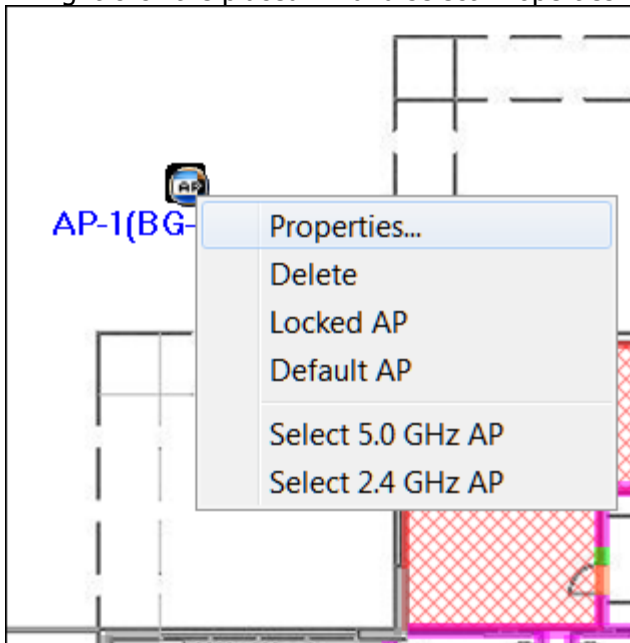
5. Here is the new pattern showing up in the Antenna Manager; Click 'Close' when done.



6. Open a project, open Planner, select a new AP and place it on the floor plan:





7. Right-click the placed AP and select 'Properties'



8. In the drop-down menu, select the new antenna (should be at the bottom)

**AIRMAGNET AP Properties**

AP Name:

AP Models:   



2.4 GHz ☒ 5.0 GHz ☐

Channel:  ☒ Enable

MAC Address:   
Ex: 01:23:89:AB:CF:3F

IP Address:  .  .  .


SSID:

Transmit Power (mWatt):   

Antenna:

- Omni-Directional (2.15dBi)
- Siemens ANT795-6MT Horizontal Radiation Pattern Connector 2 2450 MHz 4 dBi A
- Siemens ANT795-6MT Horizontal Radiation Pattern Connector 3 2450 MHz 4 dBi A
- Siemens ANT795-6MT Vertical Radiation Pattern Connector 1 2450 MHz 4 dBi E
- Siemens ANT795-6MT Vertical Radiation Pattern Connector 2 2450 MHz 4 dBi E
- Siemens ANT795-6MT Vertical Radiation Pattern Connector 3 2450 MHz 4 dBi E
- Siemens Internal antenna SCALANCE W786 2500 MHz A
- Siemens Internal antennas SCALANCE W786 2500 MHz E
- Symbol ML-2452-APA2-01 2 dBi A
- Symbol ML-2452-APA2-01 2 dBi E
- Symbol ML-2499-HPA3-01 3.3 dBi A
- Symbol ML-2499-HPA3-01 3.3 dBi E
- Telex 24-59060-05V-MM CX 2.4GHz 5dBi A
- Telex 24-59060-05V-MM CX 2.4GHz 5dBi E
- TerraWave 802.11n Dual Band Outdoor MIMO Panel Antenna N-Style Plug Connectors 2.4
- TerraWave 802.11n Dual Band Outdoor MIMO Panel Antenna N-Style Plug Connectors 2.4
- TerraWave 802.11n MIMO Patch Antenna RPTNC Plug Connectors 2.4 GHz 6 dBi A
- TerraWave 802.11n MIMO Patch Antenna RPTNC Plug Connectors 2.4 GHz 6 dBi E
- TerraWave 802.11n MIMO Quad Patch Antenna RPTNC Plug Connectors 2.4 GHz 6 dBi A
- TerraWave 802.11n MIMO Quad Patch Antenna RPTNC Plug Connectors 2.4 GHz 6 dBi E
- Terrawave M6020045023620 2.4GHz 2dBi E
- Terrawave M6025040MO1D2402M 2.4GHz 2.5dBi A
- Terrawave M6025040MO1D2402M 2.4GHz 2.5dBi E
- Terrawave M6030040O1D1820MP 2.4GHz 3dBi A
- Terrawave M6030040O1D1820MP 2.4GHz 3dBi E
- Terrawave M6060060MP13602 2.4GHz 6dBi A
- Terrawave M6060060MP13602 2.4GHz 6dBi E
- Terrawave M7025040O21802M 2.4GHz 2.5dBi E
- Trapeze MP-522 2.4GHz A
- Trapeze MP-522 2.4GHz E
- New Test Antenna 2.4 GHz

9. With the antenna selected, configure any other AP properties desired and click 'OK'

 AIRMAGNET

AP Properties

AP Name

AP-1

AP Models

2.4 GHz

5.0 GHz

Channel

1

☒ Enable

MAC Address

00:00:00:00:00:01

Ex: 01:23:89:AB:CF:3F

IP Address

0 . 0 . 0 . 0

SSID

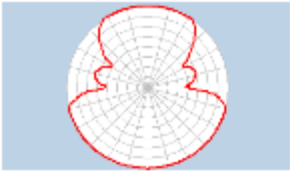
Unknown SSID

Transmit Power (mWatt)

10

Antenna

New Test Antenna 2.4 GHz



Pattern...

0

☐ 11n support

Properties...

Location

Height

10.00

×

35.91

Y

13.76

Feet

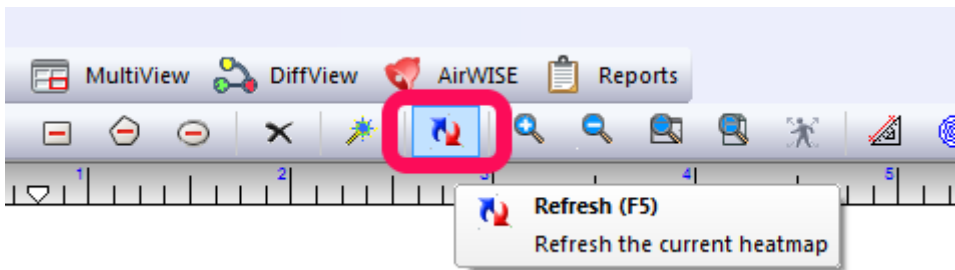
Note

OK

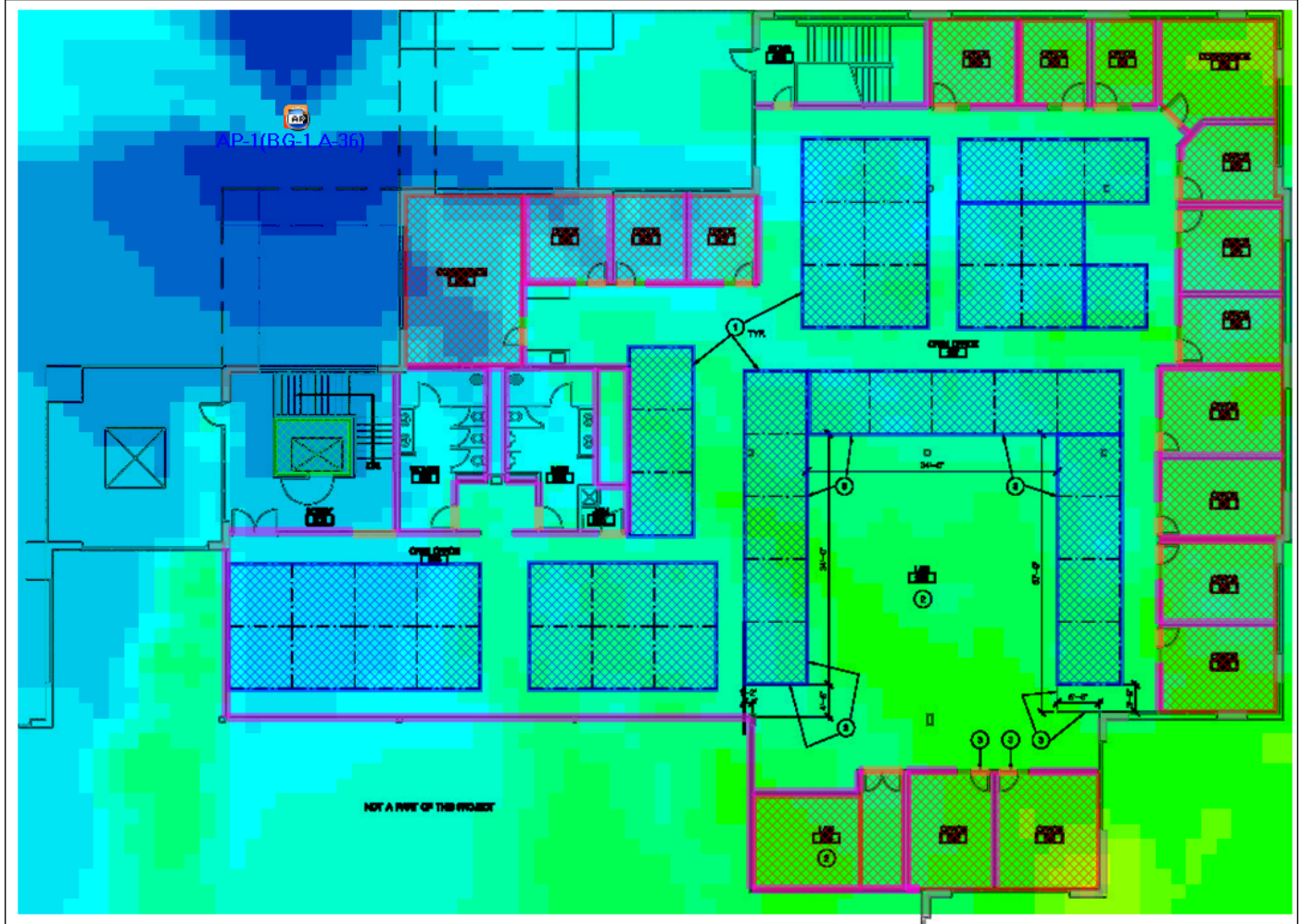
Cancel

10. Refresh the project





11. The signal level should reflect the antenna selected



**Note:** once a custom antenna pattern is created, it is a good idea to save the newly created files to a network drive. This will allow others to access and import the pattern into their version of Survey Pro or Planner. This is also useful in the event of a computer crash as the antenna pattern will not have to be created again. It will just have to be imported.

C:\Program Files (x86)\AirMagnet Inc\AirMagnet Surveyor\Antenna

**Let us know!** To ask for a particular antenna pattern to be included in a future version of Survey Pro or Planner, please [contact us](#) to provide the manufacturer's Azimuth and Radiation antenna patterns for a particular model number. With this information, a "user story" will be submitted to the AirMagnet development team and they will make a determination as to which future version of Survey Pro or Planner the antenna pattern could be entered.