

**SOPHOS**

# Operating Instructions

AP6 420(E)/840(E)



## Foreword

We are pleased to welcome you as a new Sophos AP6 Series customer.

Sophos AP6 Series access points are high performance wireless products using the latest 802.11ax technology for a best-in-class user experience. The AP6 Series models can be easily managed in Sophos Central, our cloud-based security management platform. All you need to do is set up a Sophos Central account and plug in the device anywhere in your network. The access point will find the cloud-based controller automatically and become operable within seconds.

These operating instructions will help you setup your Sophos Central account, install and configure your Sophos AP6 Series access point and also provide detailed technical specifications. In addition, please also see the following documents that contain useful information on safety, regulatory compliance, and configuration options:

- **Sophos AP6 Series Safety Instructions and Regulatory Information**
- **Sophos AP6 Series Quick Start Guide**

The instructions must be read carefully prior to using the device and should be kept in a safe place. You can download all user manuals and additional documentation from the Sophos Knowledgebase under [www.sophos.com/en-us/support/knowledgebase.aspx](http://www.sophos.com/en-us/support/knowledgebase.aspx) or from [www.sophos.com/get-started-ap](http://www.sophos.com/get-started-ap).



## Security Symbols

The following symbol and its meaning appears in the Quick Start Guide, Safety Instructions and in these Operating Instructions.

Caution and Important Note. If these notes are not correctly observed:

- This is dangerous to life and the environment
- The access point may be damaged
- The functions of the access point will be no longer guaranteed
- Sophos shall not be liable for damages arising from a failure to comply with the Safety Instructions

## Designed Use

The access point must be installed pursuant to the current installation notes. Otherwise failure-free and safe operation cannot be guaranteed. The EU declaration of conformity is available upon request from the following address:

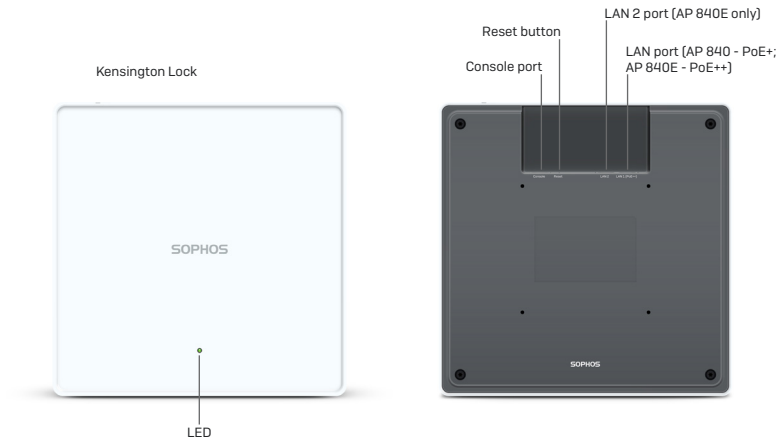
**Sophos Technology GmbH**  
**Gustav-Stresemann-Ring 1**  
**65189 Wiesbaden**  
**Germany**

It is also available online:

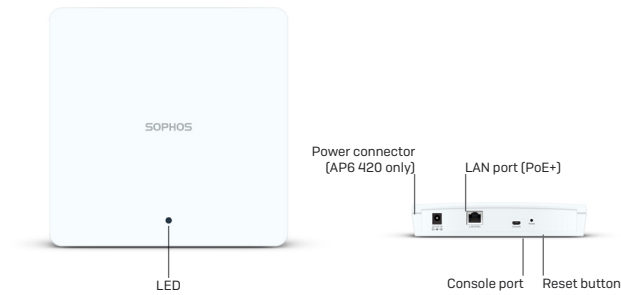
<https://docs.sophos.com/nsg/other/RegulatoryCompliance/en-us/index.html>

## Operating Elements and Connections

### AP6 840(E)



### AP6 420(E)



## Component Descriptions

Component	Description
Status LED	The Status LED indicates the operational state of your access point such as boot status, firmware updates and error states. For details, see table "LED Status" below.
LAN port (PoE) and LAN 2 port	LAN Port (AP 840 - PoE+; AP 840E - PoE++) is the primary Ethernet port for network connectivity which needs to be connected to a PoE capable source (PoE Injector* or PoE switch*) to power your access point. LAN 2 port (only on AP6 840E) is a normal Ethernet port for network connectivity. AP6 420 Model supports 10/100/1000 Mbps Ethernet port. All other AP6 models support 100/1000/2500 Mbps Ethernet port.
Console port	For debugging purposes, support staff can access the CLI by making a serial connection to the Micro USB console port. For details, see "Serial Console Connection" below.
Reset button	The reset button allows you to reboot the device and reset its configuration to the factory default. For details, please see section "Reboot & Reset".
Kensington Lock	You can physically secure the AP by attaching a lock and cable (such as a Kensington® notebook lock) to the device lock slot.
Power connector	Using the power connector (available only on AP6 420 model), the AP6 420 model can also be powered by a separate Power Supply (available as an accessory from your Sophos partner) and connected to an Ethernet switch for network connectivity. <b>Note:</b> Use one or the other power source, but not <b>both</b> .

\* Sophos offers various PoE injectors and PoE switch for purchase

## LED Status

LED on Front		
Off	Off	AP is off or reboot started.
Green	Solid	Normal operation.
	Flashing	AP is booting and establishing network connectivity.
Red	Solid	Reset button pressed, AP preparing configuration reset.
	Flashing slowly	Configuration reset in progress*.
	Flashing fast	Firmware update in progress**.

\* Your AP should recover from this state after a maximum of 5 minutes.

\*\* Note: Do not disconnect from power, nor reboot or reset the device. When the device connects to Sophos Central for the first time, it might take up to 15 minutes to update firmware.

**IMPORTANT:** LED behavior may change with future firmware updates. For the latest Quick Start Guide, please visit [www.sophos.com/get-started-ap](http://www.sophos.com/get-started-ap).

## Connection and Configuration

The initial connection of your access point to your network and the wireless controller is described in the AP6 Quick Start Guide which was been shipped with your device or is available under [www.sophos.com/get-started-ap](http://www.sophos.com/get-started-ap).

For the access point to communicate with Sophos Central servers the following ports will need to be open on your firewall:

- 443 (HTTPS)
- 80 (HTTP)
- 123 (NTP)

After successful connection you can start your initial configuration.

## Setting up your access point in Sophos Central

You will need a Sophos Central account to manage your access points from Sophos Central. Please go to <https://central.sophos.com> to sign in under your account or create a new account.

After signing in select *Wireless* from the popup screen or click on *Wireless* in the left navigation to get started.

Follow the Onboarding Wizard to register your access point.

For more information, please see the [Sophos Central Admin Help](#).

## Reboot & Reset

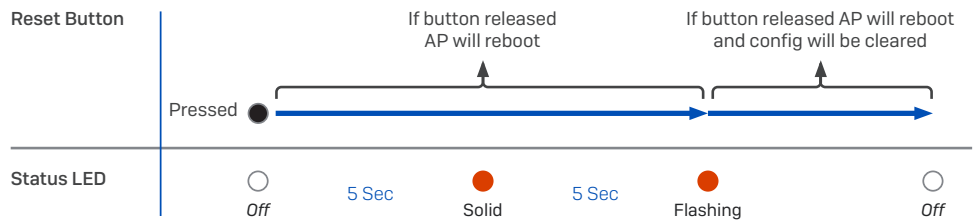
Your access point can be rebooted with the installed configuration or reset to the factory default configuration depending on how long you press and hold the reset button.

### Reboot with current image and configuration

1. Press reset button
2. Release reset button
3. AP reboots (Status LED will go off, then will start blinking after some seconds and turn to solid green after reboot is complete)

### Reboot with current image and clear configuration

1. Press and hold reset button for 5 sec.
2. Status LED will turn solid red for 5 sec. You can still cancel the configuration clearance process by releasing the reset button before the Status LED starts flashing. In that case the AP will reboot as described above.
3. After 5 sec. Status LED will start flashing red.
4. Release reset button (configuration will be cleared).
5. AP reboots with factory default settings.



## Technical specifications

AP6 420	
<b>Environment</b>	
Power consumption	17W (max.)
Power over Ethernet (PoE) requirements	802.3at
Operating temperature	0° to 40° C
Storage temperature	-40° to 70° C
Humidity	10% to 95% non-condensing
Hazardous substances	RoHS-2 and REACH compliant
<b>Physical specification</b>	
I/O ports	1x Micro USB connector console serial port 1x RJ45 10/100/1000 Mbps Ethernet w/PoE (802.3at PD) 1x Reset button 1x Kensington security slot 1x 12V DC connector
Memory	1 GB DDR3L 4 MB NOR Flash 512 MB NAND Flash
Mounting	Desktop Wall-mount Ceiling (15/16, 9/16 inch ceiling tracks)
Dimensions (Width x Depth x Height)	183 x 183 x 35 mm (7.2 x 7.2 x 1.38 inches)
Weight	0.7 kg (1.54 lbs)
<b>Wireless specification</b>	
Radios	1x 2.4 GHz single band 1x 5 GHz single band
Antennas	2x internal dual band antenna for Radio-1 (omni-directional) 2x internal 5 GHz antenna for Radio-2 (omni-directional)
Antenna Peak Gain	4.2 dBi at 2.4 GHz, 5.5 dBi at 5 GHz
MIMO capabilities	2x2:2
Supported WLAN standards	IEEE 802.11 a/b/g/n/ac/ax
SSIDs	16 (8 per Radio)
Max. Throughput	575 Mbps (2.4 GHz) + 2400 Mbps (5 GHz)

Performance				
Band [MHz]	Standard	Rate	Tx Max Power [MHz per chain] [dBm]	RSSI [dBm]
2.4 GHz (2412 – 2483)	802.11b	1Mbps	23	-98
		2Mbps	22	-91
		5Mbps	21	-92
		11Mbps	20	-89
	802.11g	6Mbps	23	-95
		9Mbps	23	-91
		12Mbps	22	-89
		18Mbps	22	-87
		24Mbps	21	-84
		36Mbps	21	-81
		48Mbps	20	-77
		54Mbps	20	-76
		802.11n	MCS0	23
	MCS1		23	-92
	MCS2		22	-89
	MCS3		22	-87
	MCS4		21	-83
	MCS5		21	-78
	MCS6		20	-77
	MCS7		19	-76
	802.11ax (HE20)	MCS0	23	-95
		MCS1	23	-92
		MCS2	22	-89
		MCS3	22	-86
		MCS4	21	-83
		MCS5	21	-79
		MCS6	20	-78
		MCS7	19	-76
		MCS8	19	-72
		MCS9	18	-70
		MCS10	17	-67
	MCS11	16	-64	
	802.11ax (HE40)	MCS0	23	-92
		MCS1	23	-90
		MCS2	22	-88
		MCS3	22	-85
		MCS4	21	-82
		MCS5	21	-78
		MCS6	20	-75
		MCS7	19	-73
		MCS8	17	-71
		MCS9	17	-68
		MCS10	16	-65
	MCS11	15	-62	

Performance				
5 GHz (5180 – 5825)	802.11a	6Mbps	22	-97
		9Mbps	22	-95
		12Mbps	22	-92
		18Mbps	22	-89
		24Mbps	22	-87
		36Mbps	22	-84
		48Mbps	21	-80
		54Mbps	20	-78
		802.11n (HT20)	MCS0	22
	MCS1		22	-94
	MCS2		22	-91
	MCS3		22	-88
	MCS4		21	-86
	MCS5		21	-83
	MCS6		20	-80
	MCS7		19	-78
	802.11n (HT40)	MCS0	22	-94
		MCS1	22	-93
		MCS2	22	-89
		MCS3	22	-85
		MCS4	21	-81
		MCS5	21	-79
		MCS6	20	-75
		MCS7	19	-75
	802.11ac (VHT20)	MCS0	22	-97
		MCS1	22	-94
		MCS2	22	-91
		MCS3	22	-88
		MCS4	21	-86
		MCS5	21	-83
		MCS6	20	-80
		MCS7	19	-78
		MCS8	18	-74
	802.11ac (VHT40)	MCS0	22	-94
		MCS1	22	-91
		MCS2	22	-88
		MCS3	22	-85
		MCS4	21	-82
		MCS5	21	-78
		MCS6	20	-76
		MCS7	19	-75
		MCS8	18	-72
		MCS9	17	-69
	802.11ac (VHT80)	MCS0	22	-91
		MCS1	22	-88
		MCS2	22	-85
		MCS3	22	-82
		MCS4	21	-79
		MCS5	21	-78
		MCS6	20	-73
		MCS7	19	-72
		MCS8	18	-69
		MCS9	17	-66

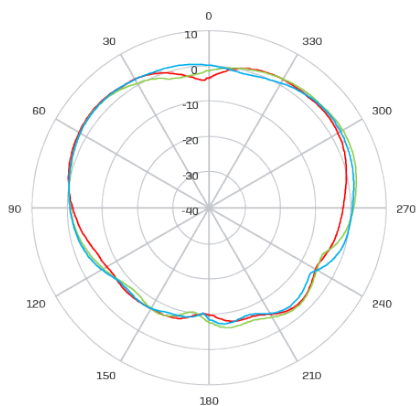


Performance				
	802.11ax (HE20)	MCS0	22	-97
		MCS1	22	-94
		MCS2	22	-91
		MCS3	22	-88
		MCS4	21	-86
		MCS5	21	-83
		MCS6	20	-80
		MCS7	19	-78
		MCS8	17	-74
		MCS9	18	-70
		MCS10	16	-68
		MCS11	15	-67
	802.11ax (HE40)	MCS0	22	-94
		MCS1	22	-91
		MCS2	22	-88
		MCS3	22	-85
		MCS4	21	-82
		MCS5	21	-78
		MCS6	20	-76
		MCS7	19	-75
		MCS8	18	-72
		MCS9	17	-69
		MCS10	16	-66
		MCS11	15	-63
	802.11ax (HE80)	MCS0	22	-91
		MCS1	22	-88
		MCS2	22	-85
		MCS3	22	-82
		MCS4	21	-79
		MCS5	21	-75
		MCS6	20	-73
		MCS7	19	-72
		MCS8	18	-69
		MCS9	17	-66
		MCS10	16	-63
		MCS11	15	-61
	802.11ax (HE160)	MCS0	22	-85
		MCS1	22	-81
		MCS2	22	-78
		MCS3	22	-75
		MCS4	21	-72
		MCS5	21	-71
		MCS6	20	-69
		MCS7	19	-68
MCS8		18	-65	
MCS9		17	-62	
MCS10		16	-59	
MCS11		15	-57	

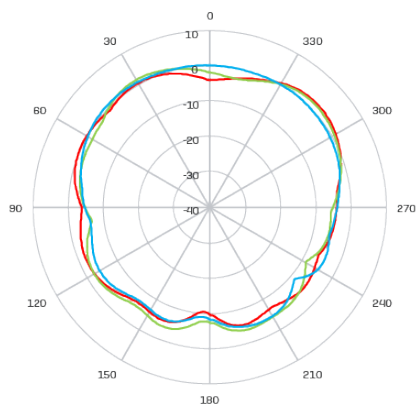
## Radiation patterns

### 2.4 GHz Band

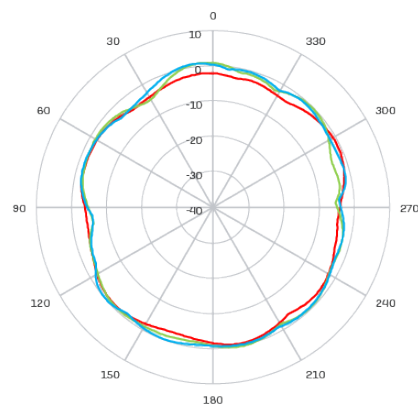
ZX



YZ



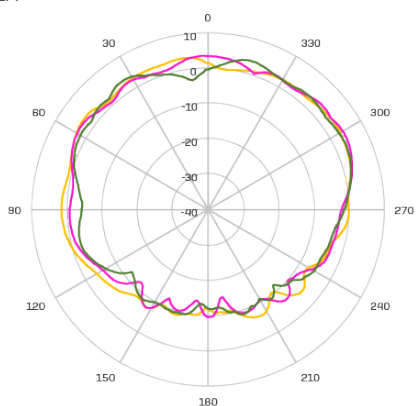
XY



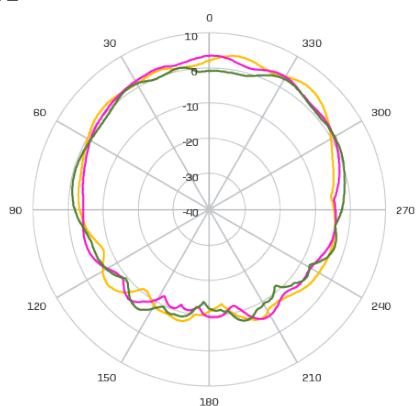
—2400 [MHz] —2450 [MHz] —2500 [MHz]

### 5 GHz Band

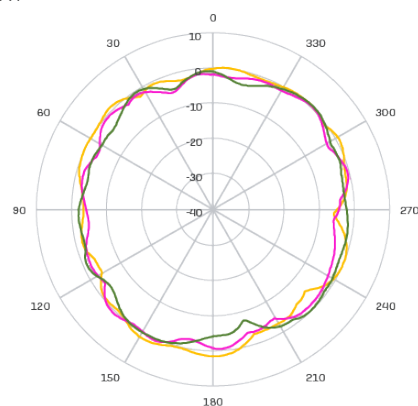
ZX



YZ



XY



—5150 [MHz] —5500 [MHz] —5850 [MHz]

AP6 420E	
<b>Environment</b>	
<b>Power consumption</b>	21W (max.)
<b>Power over Ethernet (PoE) requirements</b>	802.3at
<b>Operating temperature</b>	0° to 40° C
<b>Storage temperature</b>	-40° to 70° C
<b>Humidity</b>	10% to 95% non-condensing
<b>Hazardous substances</b>	RoHS-2 and REACH compliant
<b>Physical specification</b>	
<b>I/O ports</b>	1x Micro USB connector console serial port 1x RJ45 100/1000/2500 Mbps Ethernet w/PoE (802.3at) 1x Reset button 1x Kensington security slot
<b>Memory</b>	1 GB DDR3L 4 MB NOR Flash 512 MB NAND Flash
<b>Mounting</b>	Desktop Wall-mount Ceiling (15/16, 9/16 inch ceiling tracks)
<b>Dimensions (Width x Depth x Height)</b>	183 x 183 x 35 mm (7.2 x 7.2 x 1.38 inches)
<b>Weight</b>	0.7 kg (1.54 lbs)
<b>Wireless specification</b>	
<b>Radios</b>	1x 2.4 GHz single band 1x 5 GHz single band 1x 6 GHz single band
<b>Antennas</b>	2x internal 2.4 GHz antenna for Radio-1 (omni-directional) 2x internal 5 GHz antenna for Radio-2 (omni-directional) 2x internal 6 GHz antenna for Radio-3 (omni-directional)
<b>Antenna Peak Gain</b>	4.2 dBi at 2.4 GHz, 5.5 dBi at 5 GHz, 5.5 dBi at 6 GHz
<b>MIMO capabilities</b>	2x2:2
<b>Supported WLAN standards</b>	IEEE 802.11 a/b/g/n/ac/ax
<b>SSIDs</b>	24 (8 per Radio)
<b>Max. Throughput</b>	575 Mbps (2.4 GHz) + 2400 Mbps (5 GHz) + 2400 Mbps (6 GHz)

Performance				
Band [MHz]	Standard	Rate	Tx Max Power [MHz per chain] [dBm]	RSSI [dBm]
2.4 GHz (2412 – 2483)	802.11b	1Mbps	23	-98
		2 Mbps	22	-95
		5 Mbps	21	-92
		11Mbps	20	-89
	802.11g	6Mbps	23	-95
		9Mbps	22	-95
		12Mbps	22	-92
		18Mbps	21	-89
		24Mbps	21	-86
		36Mbps	21	-83
		48Mbps	20	-79
		54Mbps	20	-76
		802.11n	MCS0	23
	MCS1		23	-89
	MCS2		22	-86
	MCS3		22	-83
	MCS4		22	-80
	MCS5		21	-77
	MCS6		20	-74
	MCS7		19	-71
	802.11ax (HE20)	MCS0	23	-95
		MCS1	23	-92
		MCS2	22	-89
		MCS3	22	-85
		MCS4	21	-82
		MCS5	21	-79
		MCS6	20	-77
		MCS7	19	-76
		MCS8	18	-73
		MCS9	18	-70
		MCS10	17	-67
	802.11ax (HE40)	MCS11	16	-64
		MCS0	23	-92
		MCS1	23	-89
		MCS2	22	-86
		MCS3	21	-83
		MCS4	21	-80
		MCS5	20	-77
		MCS6	19	-74
		MCS7	19	-73
		MCS8	18	-70
		MCS9	17	-68
		MCS10	16	-65
	MCS11	15	-62	

Performance				
5 GHz (5180 – 5825)	802.11a	6Mbps	22	-97
		9Mbps	22	-93
		12Mbps	22	-92
		18Mbps	21	-89
		24Mbps	21	-87
		36Mbps	21	-84
		48Mbps	20	-81
		54Mbps	20	-78
		802.11n (HT20)	MCS0	22
	MCS1		22	-92
	MCS2		22	-89
	MCS3		21	-86
	MCS4		21	-83
	MCS5		20	-79
	MCS6		19	-76
	MCS7		18	-73
	802.11n (HT40)	MCS0	22	-92
		MCS1	22	-89
		MCS2	21	-86
		MCS3	21	-83
		MCS4	20	-79
		MCS5	19	-76
		MCS6	18	-73
		MCS7	17	-70
	802.11ac (VHT20)	MCS0	22	-89
		MCS1	21	-86
		MCS2	20	-83
		MCS3	19	-80
		MCS4	18	-76
		MCS5	17	-73
		MCS6	16	-70
		MCS7	15	-67
		MCS8	14	-64
	802.11ac (VHT40)	MCS0	22	-86
		MCS1	21	-83
		MCS2	20	-80
		MCS3	19	-77
		MCS4	18	-74
		MCS5	17	-71
		MCS6	16	-68
		MCS7	15	-65
		MCS8	14	-62
		MCS9	13	-59
	802.11ac (VHT80)	MCS0	22	-85
		MCS1	21	-82
		MCS2	20	-79
		MCS3	19	-76
		MCS4	18	-73
		MCS5	17	-70
		MCS6	16	-67
		MCS7	15	-64
		MCS8	14	-61
		MCS9	13	-58

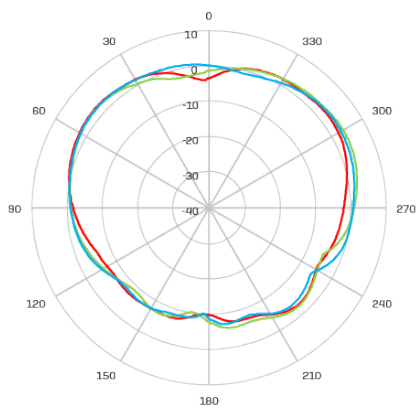
Performance				
	802.11ax (HE20)	MCS0	22	-97
		MCS1	22	-94
		MCS2	22	-91
		MCS3	21	-88
		MCS4	21	-85
		MCS5	20	-84
		MCS6	19	-81
		MCS7	19	-78
		MCS8	18	-74
		MCS9	17	-70
		MCS10	16	-68
		MCS11	15	-67
	802.11ax (HE40)	MCS0	22	-94
		MCS1	22	-91
		MCS2	22	-88
		MCS3	21	-85
		MCS4	21	-82
		MCS5	20	-79
		MCS6	19	-77
		MCS7	19	-75
		MCS8	18	-72
		MCS9	17	-69
		MCS10	16	-66
		MCS11	15	-63
	802.11ax (HE80)	MCS0	22	-91
		MCS1	22	-88
		MCS2	22	-85
		MCS3	21	-82
		MCS4	21	-79
		MCS5	20	-76
		MCS6	19	-73
		MCS7	19	-70
		MCS8	18	-68
		MCS9	17	-66
		MCS10	16	-63
		MCS11	15	-61
	802.11ax (HE160)	MCS0	22	-85
		MCS1	22	-82
		MCS2	22	-79
		MCS3	21	-76
		MCS4	21	-73
		MCS5	20	-70
		MCS6	19	-67
		MCS7	19	-64
MCS8		18	-63	
MCS9		17	-60	
MCS10		16	-58	
MCS11		15	-57	

Performance				
6 GHz (5925 – 7125)	802.11ax (HE20)	MCS0	20	-91
		MCS1	20	-87
		MCS2	20	-84
		MCS3	19	-81
		MCS4	19	-78
		MCS5	18	-77
		MCS6	18	-75
		MCS7	17	-72
		MCS8	17	-70
		MCS9	16	-67
		MCS10	15	-64
	MCS11	14	-61	
	802.11ax (HE40)	MCS0	20	-87
		MCS1	20	-84
		MCS2	20	-81
		MCS3	19	-78
		MCS4	19	-75
		MCS5	18	-72
		MCS6	18	-69
		MCS7	17	-66
		MCS8	17	-63
		MCS9	16	-60
		MCS10	15	-57
	MCS11	14	-54	
	802.11ax (HE80)	MCS0	20	-86
		MCS1	20	-83
		MCS2	20	-80
		MCS3	19	-77
		MCS4	19	-74
		MCS5	18	-71
		MCS6	18	-68
		MCS7	17	-65
		MCS8	17	-62
		MCS9	16	-59
		MCS10	15	-56
	MCS11	14	-53	
	802.11ax (HE160)	MCS0	20	-81
		MCS1	20	-78
		MCS2	20	-75
		MCS3	19	-72
		MCS4	19	-69
		MCS5	18	-66
		MCS6	18	-63
		MCS7	17	-60
MCS8		17	-57	
MCS9		16	-54	
MCS10		15	-51	
MCS11	14	-50		

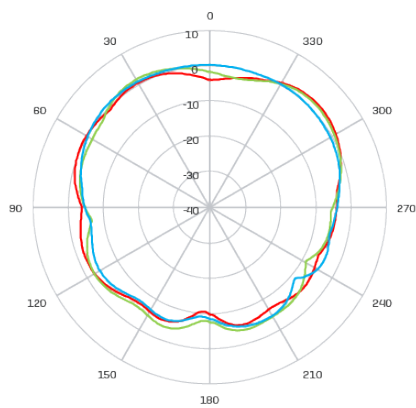
## Radiation patterns

### 2.4 GHz Band

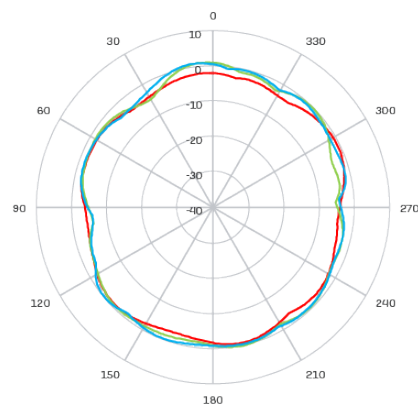
ZX



YZ



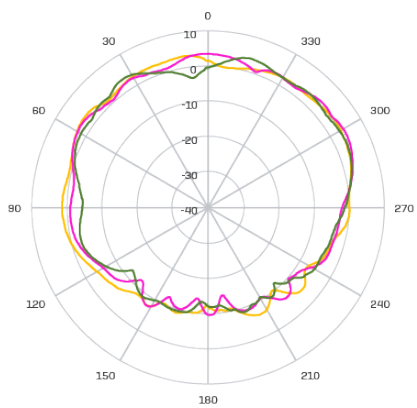
XY



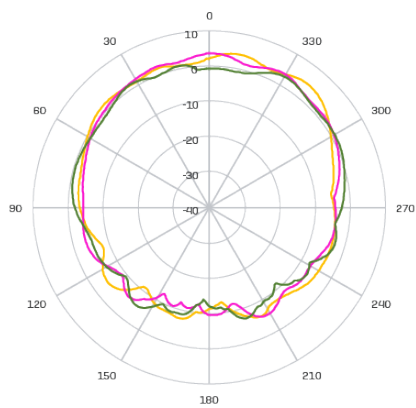
—2400 [MHz] —2450 [MHz] —2500 [MHz]

### 5 GHz Band

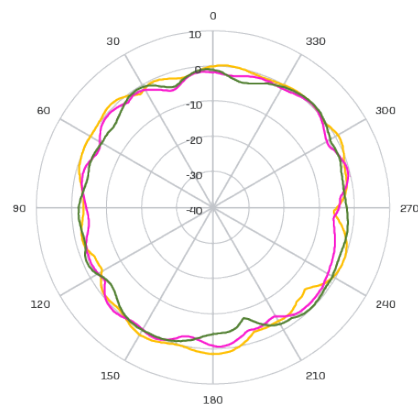
ZX



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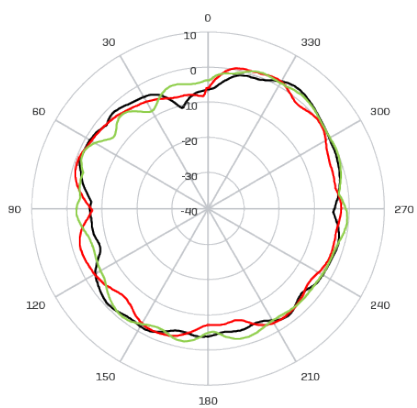
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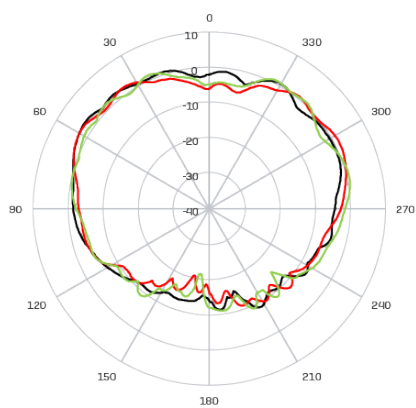
—5150 [MHz] —5500 [MHz] —5850 [MHz]

### 6 GHz Band

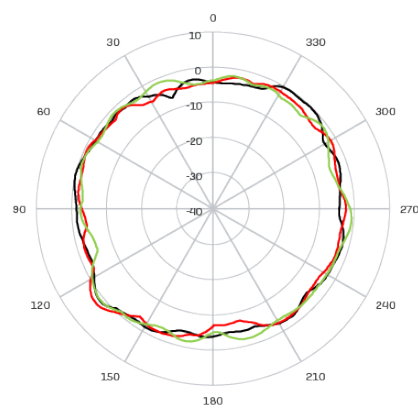
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—5925 [MHz] —6525 [MHz] —7125 [MHz]



## AP6 840

### Environment

<b>Power consumption</b>	25.5W (max.)
<b>Power over Ethernet (PoE) requirements</b>	802.3at
<b>Operating temperature</b>	0° to 40° C
<b>Storage temperature</b>	-40° to 70° C
<b>Humidity</b>	10% to 95% non-condensing
<b>Hazardous substances</b>	RoHS-2 and REACH compliant

### Physical specification

<b>I/O ports</b>	1x Micro USB connector console serial port 1x RJ45 100/1000/2500 Mbps Ethernet w/PoE (802.3at) 1x Reset button 1x Kensington security slot
<b>Memory</b>	1 GB DDR4 8 MB NOR Flash 512 MB NAND Flash
<b>Mounting</b>	Desktop Wall-mount Ceiling (15/16, 9/16 inch ceiling tracks)
<b>Dimensions (Width x Depth x Height)</b>	225 x 225 x 43 mm (8.86 x 8.86 x 1.69 inches)
<b>Weight</b>	1.2 kg (2.65 lbs)

### Wireless specification

<b>Radios</b>	1x 2.4 GHz single band 1x 5 GHz single band
<b>Antennas</b>	4x internal 2.4 GHz antenna for Radio-1 (omni-directional) 4x internal 5 GHz antenna for Radio-2 (omni-directional)
<b>Antenna Peak Gain</b>	5.4 dBi at 2.4 GHz, 6.2 dBi at 5 GHz
<b>MIMO capabilities</b>	4x4:4
<b>Supported WLAN standards</b>	IEEE 802.11 a/b/g/n/ac/ax
<b>SSIDs</b>	32 (16 per Radio)
<b>Max. Throughput</b>	1150 Mbps (2.4 GHz) + 2400 Mbps (5 GHz)

Performance					
Band [MHz]	Standard	Rate	Tx Max Power [MHz per chain] [dBm]	RSSI [dBm]	
2 GHz (2412 – 2483)	802.11b	1Mbps	23	-98	
		2 Mbps	22	-95	
		5 Mbps	21	-92	
		11Mbps	20	-89	
	802.11g	6Mbps	23	-95	
		9Mbps	22	-95	
		12Mbps	22	-92	
		18Mbps	21	-89	
		24Mbps	21	-86	
		36Mbps	21	-83	
		48Mbps	20	-79	
		54Mbps	20	-76	
		802.11n	MCS0	23	-92
			MCS1	23	-89
	MCS2		22	-86	
	MCS3		22	-83	
	MCS4		22	-80	
	MCS5		21	-77	
	MCS6		20	-74	
	MCS7		19	-71	
	802.11ax (HE20)	MCS0	23	-95	
		MCS1	23	-92	
		MCS2	22	-89	
		MCS3	22	-85	
		MCS4	21	-82	
		MCS5	21	-79	
		MCS6	20	-77	
		MCS7	19	-76	
		MCS8	18	-73	
		MCS9	18	-70	
		MCS10	17	-67	
		MCS11	16	-64	
	802.11ax (HE40)	MCS0	23	-92	
		MCS1	23	-89	
		MCS2	22	-86	
		MCS3	21	-83	
		MCS4	21	-80	
		MCS5	20	-77	
		MCS6	19	-74	
		MCS7	19	-73	
		MCS8	18	-70	
		MCS9	17	-68	
		MCS10	16	-65	
		MCS11	15	-62	

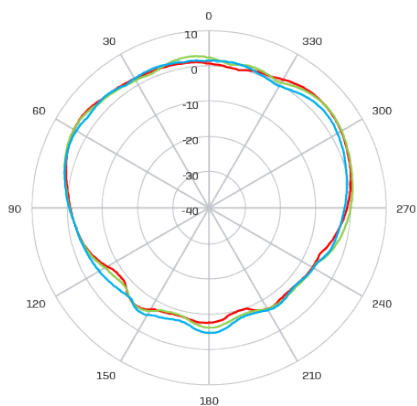
Performance				
5 GHz (5180 – 5825)	802.11a	6Mbps	22	-97
		9Mbps	22	-93
		12Mbps	22	-92
		18Mbps	21	-89
		24Mbps	21	-87
		36Mbps	21	-84
		48Mbps	20	-81
		54Mbps	20	-78
		802.11n (HT20)	MCS0	22
	MCS1		22	-92
	MCS2		22	-89
	MCS3		21	-86
	MCS4		21	-83
	MCS5		20	-79
	MCS6		19	-76
	MCS7		18	-73
	802.11n (HT40)	MCS0	22	-92
		MCS1	22	-89
		MCS2	21	-86
		MCS3	21	-83
		MCS4	20	-79
		MCS5	19	-76
		MCS6	18	-73
		MCS7	17	-70
	802.11ac (VHT20)	MCS0	22	-89
		MCS1	21	-86
		MCS2	20	-83
		MCS3	19	-80
		MCS4	18	-76
		MCS5	17	-73
		MCS6	16	-70
		MCS7	15	-67
		MCS8	14	-64
	802.11ac (VHT40)	MCS0	22	-86
		MCS1	21	-83
		MCS2	20	-80
		MCS3	19	-77
		MCS4	18	-74
		MCS5	17	-71
		MCS6	16	-68
		MCS7	15	-65
		MCS8	14	-62
		MCS9	13	-59
	802.11ac (VHT80)	MCS0	22	-85
		MCS1	21	-82
		MCS2	20	-79
		MCS3	19	-76
		MCS4	18	-73
		MCS5	17	-70
		MCS6	16	-67
		MCS7	15	-64
		MCS8	14	-61
		MCS9	13	-58

Performance				
	802.11ax (HE20)	MCS0	22	-97
		MCS1	22	-94
		MCS2	22	-91
		MCS3	21	-88
		MCS4	21	-85
		MCS5	20	-84
		MCS6	19	-81
		MCS7	19	-78
		MCS8	18	-74
		MCS9	17	-70
		MCS10	16	-68
		MCS11	15	-67
	802.11ax (HE40)	MCS0	22	-94
		MCS1	22	-91
		MCS2	22	-88
		MCS3	21	-85
		MCS4	21	-82
		MCS5	20	-79
		MCS6	19	-77
		MCS7	19	-75
		MCS8	18	-72
		MCS9	17	-69
		MCS10	16	-66
		MCS11	15	-63
	802.11ax (HE80)	MCS0	22	-91
		MCS1	22	-88
		MCS2	22	-85
		MCS3	21	-82
		MCS4	21	-79
		MCS5	20	-76
		MCS6	19	-73
		MCS7	19	-70
		MCS8	18	-68
		MCS9	17	-66
		MCS10	16	-63
		MCS11	15	-61
	802.11ax (HE160)	MCS0	22	-85
		MCS1	22	-82
		MCS2	22	-79
		MCS3	21	-76
		MCS4	21	-73
		MCS5	20	-70
		MCS6	19	-67
		MCS7	19	-64
MCS8		18	-63	
MCS9		17	-60	
MCS10		16	-58	
MCS11		15	-57	

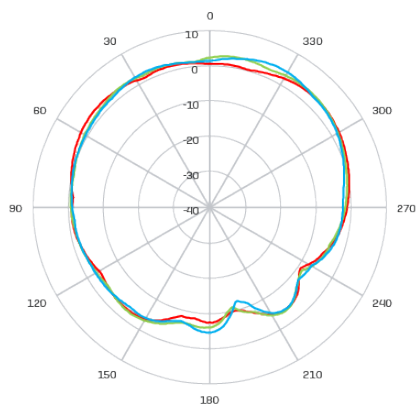
## Radiation patterns

### 2.4 GHz Band

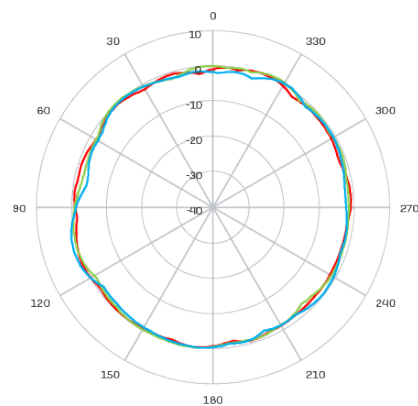
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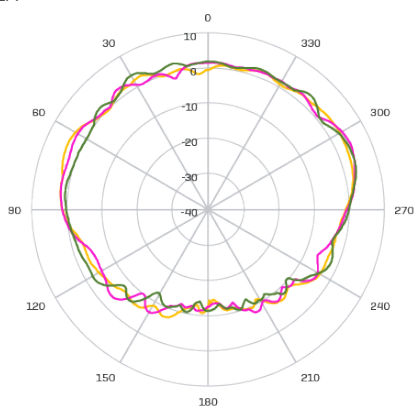
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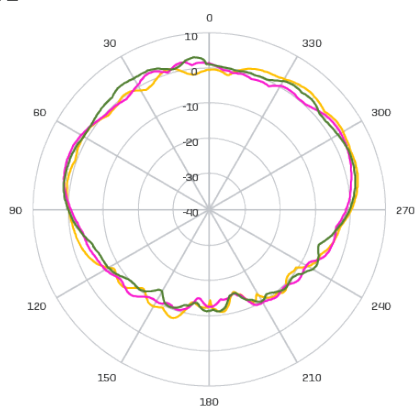
—2400 [MHz] —2450 [MHz] —2500 [MHz]

### 5 GHz Band

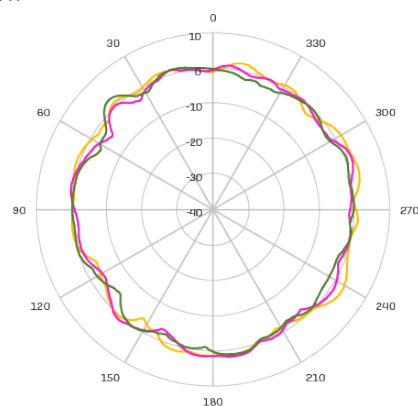
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—5150 [MHz] —5500 [MHz] —5850 [MHz]

AP6 840E	
<b>Environment</b>	
<b>Power consumption</b>	40W (max.)
<b>Power over Ethernet (PoE) requirements</b>	802.3bt
<b>Operating temperature</b>	0° to 40° C
<b>Storage temperature</b>	-40° to 70° C
<b>Humidity</b>	10% to 95% non-condensing
<b>Hazardous substances</b>	RoHS-2 and REACH compliant
<b>Physical specification</b>	
<b>I/O ports</b>	1x Micro USB connector console serial port 1x RJ45 100/1000/2500 Mbps Ethernet 1x RJ45 100/1000/2500 Mbps Ethernet w/PoE (802.3bt) 1x Reset button 1x Kensington security slot
<b>Memory</b>	1 GB DDR4 8 MB NOR Flash 512 MB NAND Flash
<b>Mounting</b>	Desktop Wall-mount Ceiling (15/16, 9/16 inch ceiling tracks)
<b>Dimensions (Width x Depth x Height)</b>	225 x 225 x 43 mm (8.86 x 8.86 x 1.69 inches)
<b>Weight</b>	1.2 kg (2.65 lbs)
<b>Wireless specification</b>	
<b>Radios</b>	1x 2.4 GHz single band 1x 5 GHz single band 1x 6 GHz single-band
<b>Antennas</b>	4x internal 2.4 GHz antenna for Radio-1 (omni-directional) 4x internal 5 GHz antenna for Radio-2 (omni-directional) 4x internal 6 GHz antenna for Radio-3 (omni-directional)
<b>Antenna Peak Gain</b>	5.4 dBi at 2.4 GHz, 6.4 dBi at 5 GHz, 7.2 dBi at 6GHz
<b>MIMO capabilities</b>	4x4:4
<b>Supported WLAN standards</b>	IEEE 802.11 a/b/g/n/ac/ax
<b>SSIDs</b>	48 (16 per Radio)
<b>Max. Throughput</b>	1150 Mbps (2.4 GHz) + 2400 Mbps (5 GHz) + 4800 Mbps (6 GHz)

Performance				
Band [MHz]	Standard	Rate	Tx Max Power [MHz per chain] [dBm]	RSSI [dBm]
2 GHz (2412 – 2483)	802.11b	1Mbps	23	-98
		2 Mbps	22	-95
		5 Mbps	21	-92
		11Mbps	20	-89
	802.11g	6Mbps	23	-95
		9Mbps	22	-95
		12Mbps	22	-92
		18Mbps	21	-89
		24Mbps	21	-86
		36Mbps	21	-83
		48Mbps	20	-79
		54Mbps	20	-76
		802.11n	MCS0	23
	MCS1		23	-89
	MCS2		22	-86
	MCS3		22	-83
	MCS4		22	-80
	MCS5		21	-77
	MCS6		20	-74
	MCS7		19	-71
	802.11ax (HE20)	MCS0	23	-95
		MCS1	23	-92
		MCS2	22	-89
		MCS3	22	-85
		MCS4	21	-82
		MCS5	21	-79
		MCS6	20	-77
		MCS7	19	-76
		MCS8	18	-73
		MCS9	18	-70
		MCS10	17	-67
		MCS11	16	-64
	802.11ax (HE40)	MCS0	23	-92
		MCS1	23	-89
		MCS2	22	-86
		MCS3	21	-83
		MCS4	21	-80
		MCS5	20	-77
		MCS6	19	-74
		MCS7	19	-73
		MCS8	18	-70
		MCS9	17	-68
		MCS10	16	-65
		MCS11	15	-62

Performance				
5 GHz (5180 – 5825)	802.11a	6Mbps	22	-97
		9Mbps	22	-93
		12Mbps	22	-92
		18Mbps	21	-89
		24Mbps	21	-87
		36Mbps	21	-84
		48Mbps	20	-81
		54Mbps	20	-78
		802.11n (HT20)	MCS0	22
	MCS1		22	-92
	MCS2		22	-89
	MCS3		21	-86
	MCS4		21	-83
	MCS5		20	-79
	MCS6		19	-76
	MCS7		18	-73
	802.11n (HT40)	MCS0	22	-92
		MCS1	22	-89
		MCS2	21	-86
		MCS3	21	-83
		MCS4	20	-79
		MCS5	19	-76
		MCS6	18	-73
		MCS7	17	-70
	802.11ac (VHT20)	MCS0	22	-89
		MCS1	21	-86
		MCS2	20	-83
		MCS3	19	-80
		MCS4	18	-76
		MCS5	17	-73
		MCS6	16	-70
		MCS7	15	-67
		MCS8	14	-64
	802.11ac (VHT40)	MCS0	22	-86
		MCS1	21	-83
		MCS2	20	-80
		MCS3	19	-77
		MCS4	18	-74
		MCS5	17	-71
		MCS6	16	-68
		MCS7	15	-65
		MCS8	14	-62
		MCS9	13	-59
	802.11ac (VHT80)	MCS0	22	-85
		MCS1	21	-82
		MCS2	20	-79
		MCS3	19	-76
		MCS4	18	-73
		MCS5	17	-70
		MCS6	16	-67
MCS7		15	-64	
MCS8		14	-61	
MCS9		13	-58	

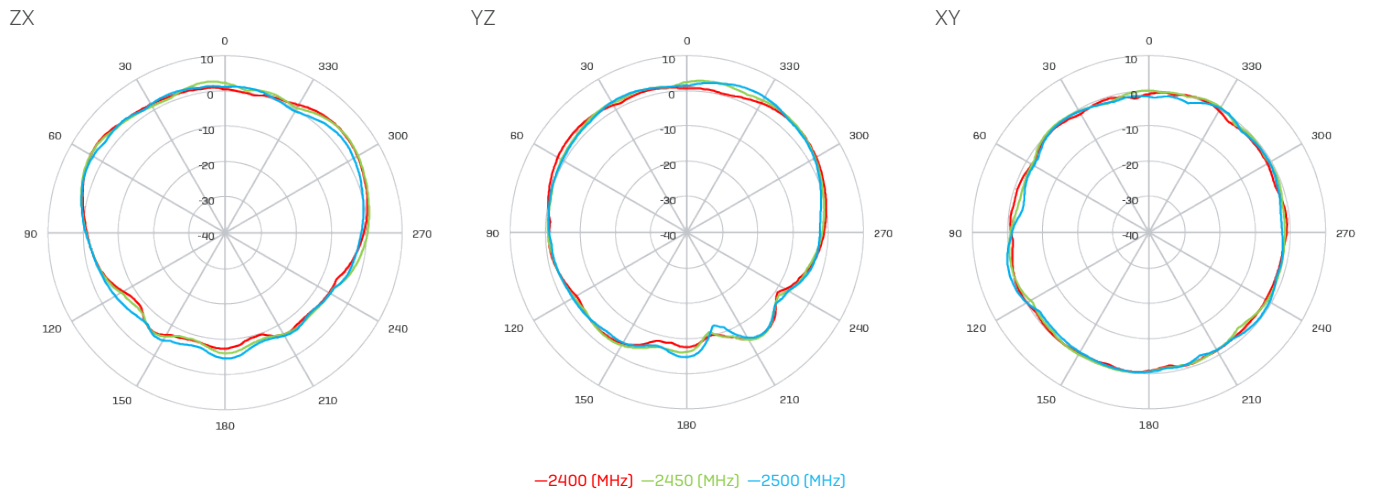


Performance				
	802.11ax (HE20)	MCS0	22	-97
		MCS1	22	-94
		MCS2	22	-91
		MCS3	21	-88
		MCS4	21	-85
		MCS5	20	-84
		MCS6	19	-81
		MCS7	19	-78
		MCS8	18	-74
		MCS9	17	-70
		MCS10	16	-68
		MCS11	15	-67
	802.11ax (HE40)	MCS0	22	-94
		MCS1	22	-91
		MCS2	22	-88
		MCS3	21	-85
		MCS4	21	-82
		MCS5	20	-79
		MCS6	19	-77
		MCS7	19	-75
		MCS8	18	-72
		MCS9	17	-69
		MCS10	16	-66
		MCS11	15	-63
	802.11ax (HE80)	MCS0	22	-91
		MCS1	22	-88
		MCS2	22	-85
		MCS3	21	-82
		MCS4	21	-79
		MCS5	20	-76
		MCS6	19	-73
		MCS7	19	-70
		MCS8	18	-68
		MCS9	17	-66
		MCS10	16	-63
		MCS11	15	-61
	802.11ax (HE160)	MCS0	22	-85
		MCS1	22	-82
		MCS2	22	-79
		MCS3	21	-76
		MCS4	21	-73
		MCS5	20	-70
		MCS6	19	-67
		MCS7	19	-64
MCS8		18	-63	
MCS9		17	-60	
MCS10		16	-58	
MCS11		15	-57	

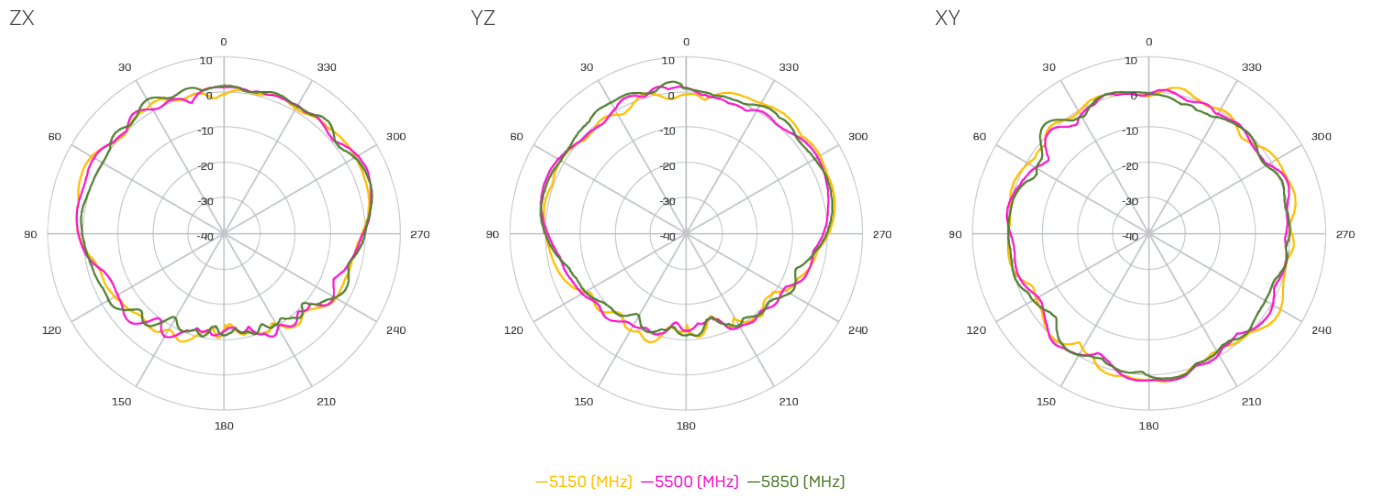
Performance				
6 GHz (5925 – 7125)	802.11ax (HE20)	MCS0	20	-91
		MCS1	20	-87
		MCS2	20	-84
		MCS3	19	-81
		MCS4	19	-78
		MCS5	18	-77
		MCS6	18	-75
		MCS7	17	-72
		MCS8	17	-70
		MCS9	16	-67
		MCS10	15	-64
		MCS11	14	-61
	802.11ax (HE40)	MCS0	20	-87
		MCS1	20	-84
		MCS2	20	-81
		MCS3	19	-78
		MCS4	19	-75
		MCS5	18	-72
		MCS6	18	-69
		MCS7	17	-66
		MCS8	17	-63
		MCS9	16	-60
		MCS10	15	-57
		MCS11	14	-54
	802.11ax (HE80)	MCS0	20	-86
		MCS1	20	-83
		MCS2	20	-80
		MCS3	19	-77
		MCS4	19	-74
		MCS5	18	-71
		MCS6	18	-68
		MCS7	17	-65
		MCS8	17	-62
		MCS9	16	-59
		MCS10	15	-56
		MCS11	14	-53
	802.11ax (HE160)	MCS0	20	-81
		MCS1	20	-78
		MCS2	20	-75
		MCS3	19	-72
		MCS4	19	-69
		MCS5	18	-66
		MCS6	18	-63
		MCS7	17	-60
MCS8		17	-57	
MCS9		16	-54	
MCS10		15	-51	
MCS11		14	-50	

## Radiation patterns

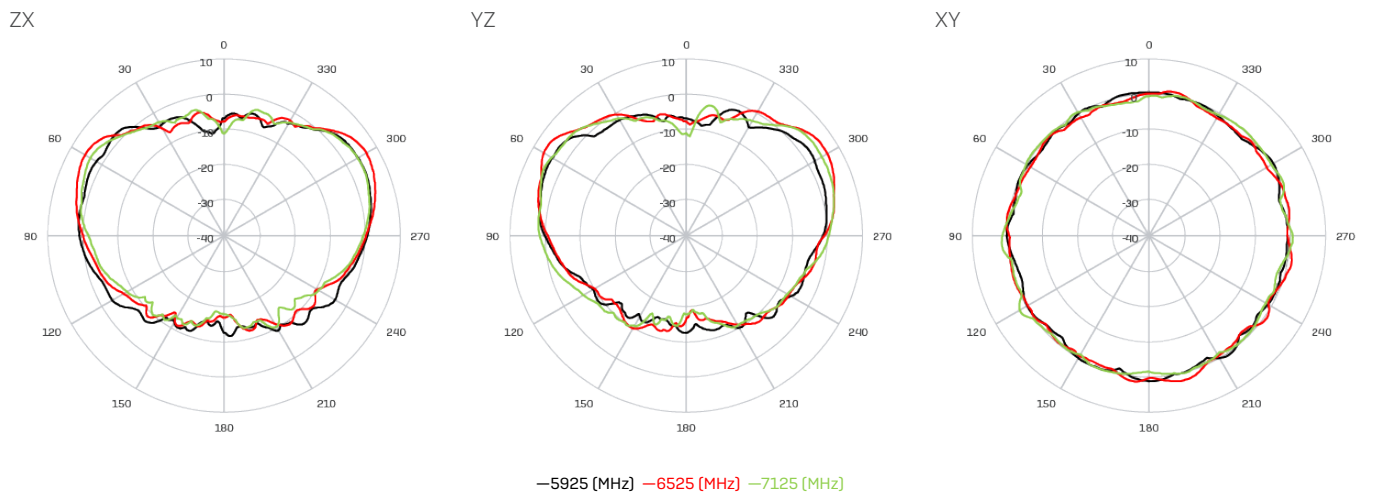
### 2.4 GHz Band



### 5 GHz Band



### 6 GHz Band



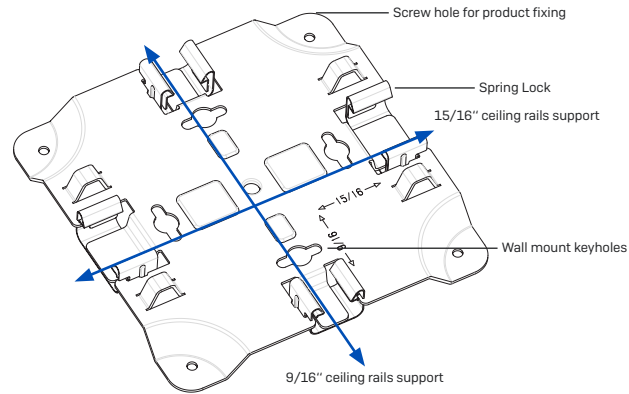
## Mounting instructions

There are various mounting options available allowing you to hang your access point on the wall or mount it to various ceiling types. The following sections provide detailed instructions for the various options which are available today.

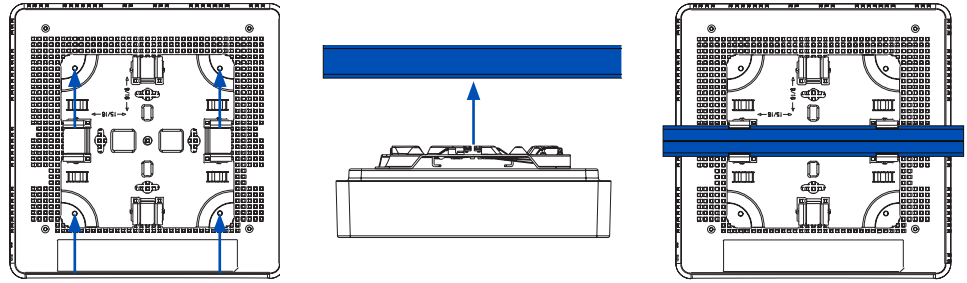
### Standard wall and ceiling rails mount

Each Sophos Access Point AP6 420(E) and AP6 840(E) ships with a mounting bracket that supports the following mounting options:

- Ceiling mount for 15/16", and 9/16" ceiling track, flush ceiling tiles
- Wall mount hang

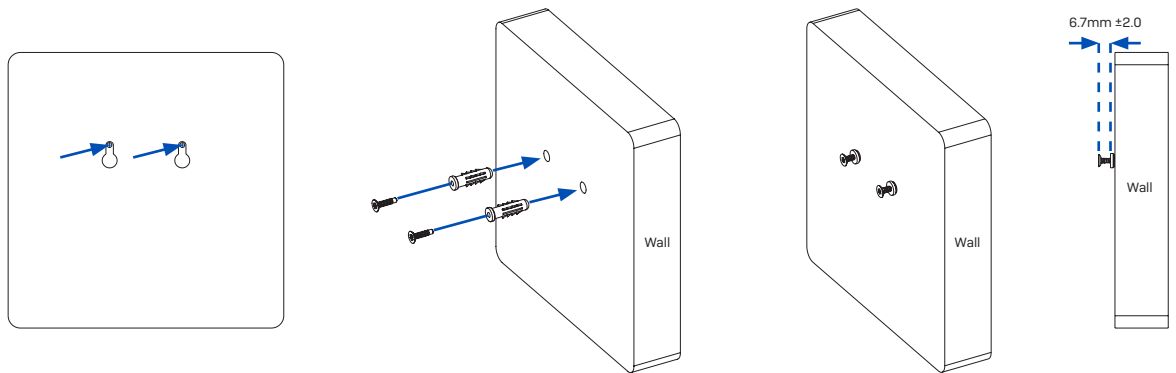


### Ceiling mount

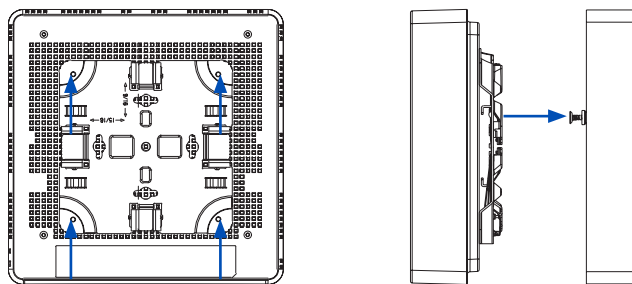


1. Fix the bracket to the rear of the Access Point by using 4 of the supplied screws.
2. To install, put the access point underneath the ceiling rail and turn it into place. To dismantle, push down the spring locks and turn the access point in the other direction.

### Wall mount



1. Use the mounting template to mark the screw mounting positions on the wall.
2. Drill the 2 supplied wall anchors into the wall at the marked positions and screw 2 supplied screws into them. Make sure they stand out ~6.7mm.
3. Fix the bracket to the rear of the Access Point by using 4 of the supplied screws.

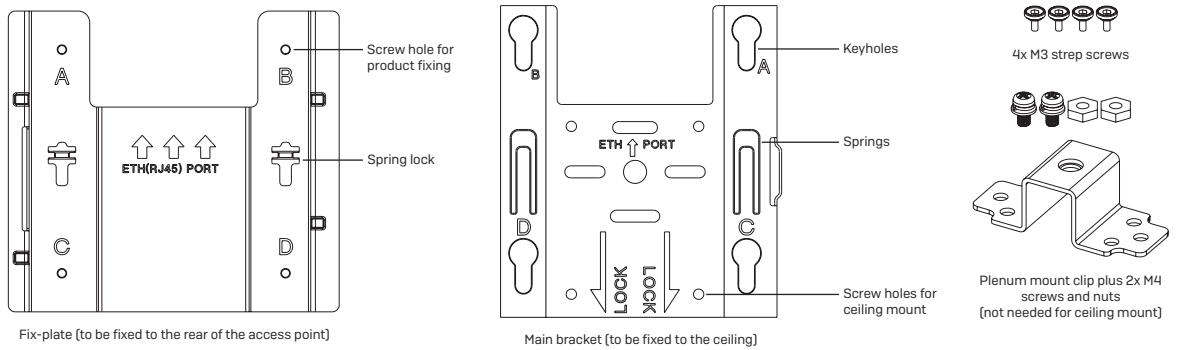


4. Hang the access point (with the mounted bracket) on the wall by aligning the key holes with the mounted screws.

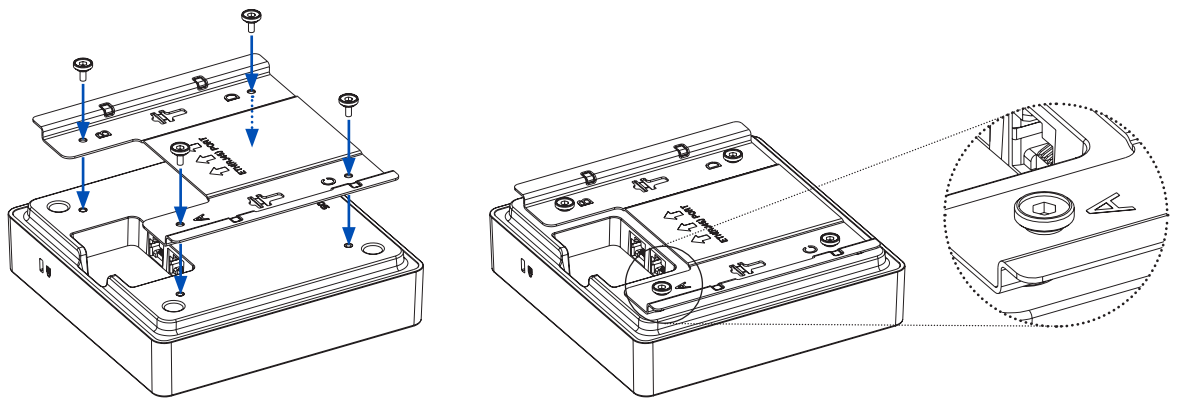
### Flat ceiling mount

To mount your access point to a flat ceiling, please use the “flat ceiling & plenum mounting kit” which is available as an option from your Sophos partner.

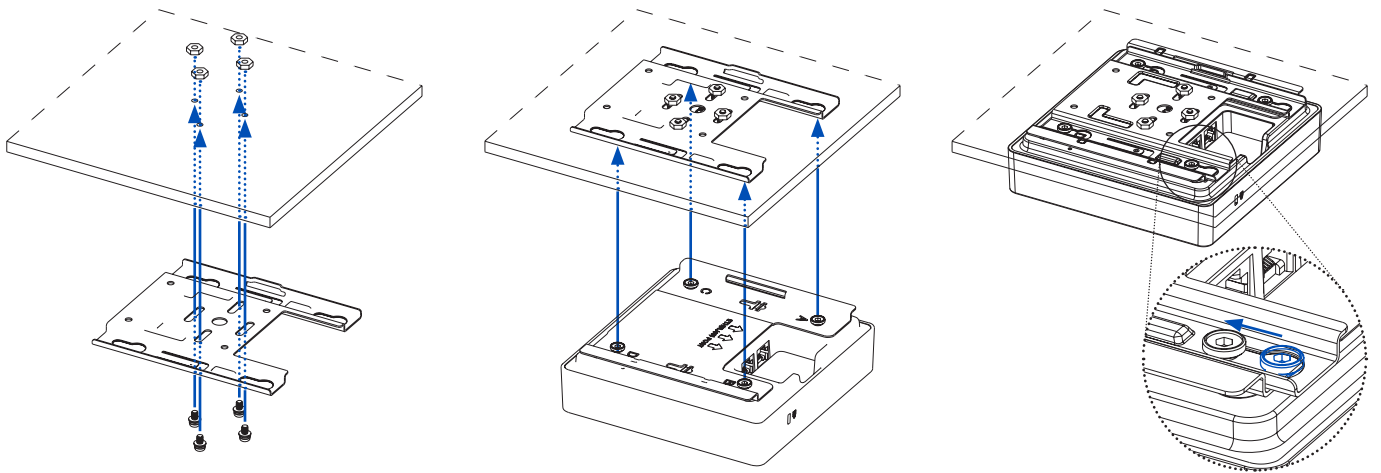
The kit consists of the following components:



### Mounting instructions



1. Place the fix-plate on the rear of the Access Point. Make sure it's positioned in the right direction as indicated.

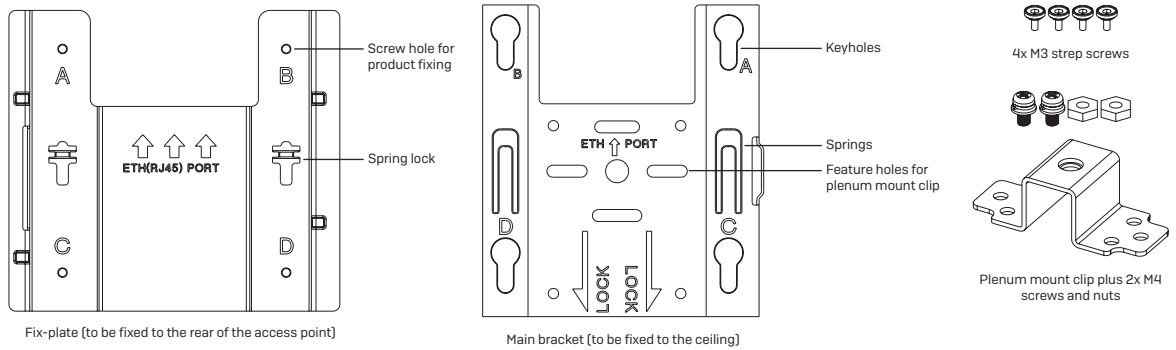


2. Install 4 step-screws (M3) from the supply into the bracket holes.
3. Fix the main bracket to a concrete ceiling by using 4 wall anchors and screws or to a ceiling tile by using 4 screws and nuts (not supplied).
4. Align the Access Point (with fix-plate) via the key holes to the main bracket and push it to the end in the sliding-slot.

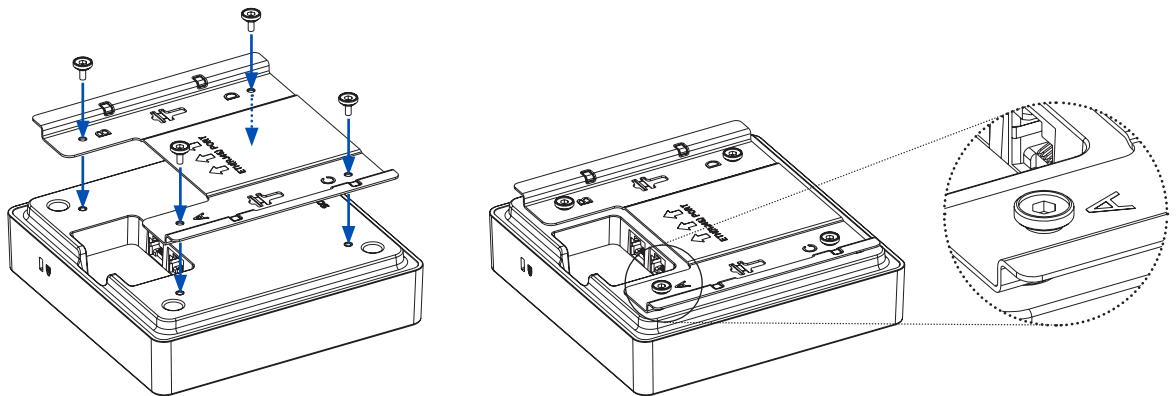
## Plenum mount

For plenum mounting, please use the “flat ceiling & plenum mounting kit” which is available as an option from your Sophos partner. The plenum mounting kit must be installed by a skilled installer.

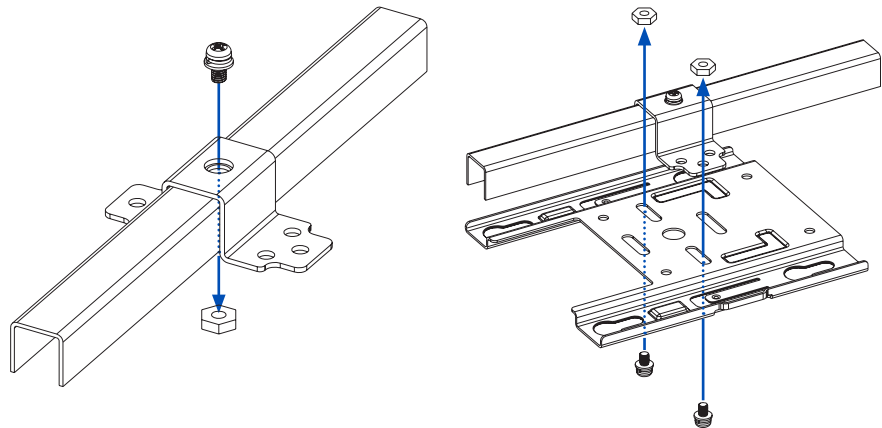
The kit consists of the following components:



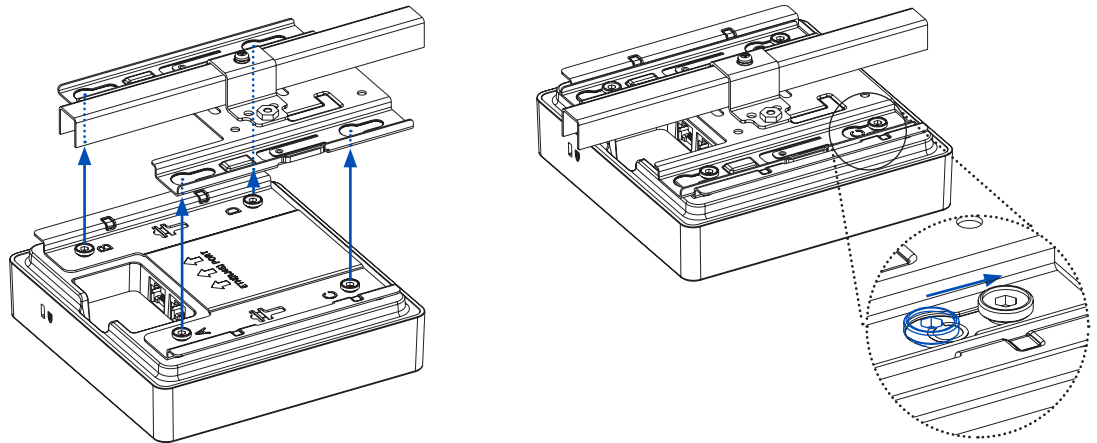
## Mounting instructions



1. Place the fix-plate on the rear of the Access Point. Make sure it's positioned in the right direction as indicated.
2. Install 4 step-screws (M3) from the supply into the bracket holes.



3. Install the plenum clip onto the hanger frame and fix it with a M4 or M5 screw (not supplied).
4. Connect the main bracket to the clip by using 2 of the supplied screws.

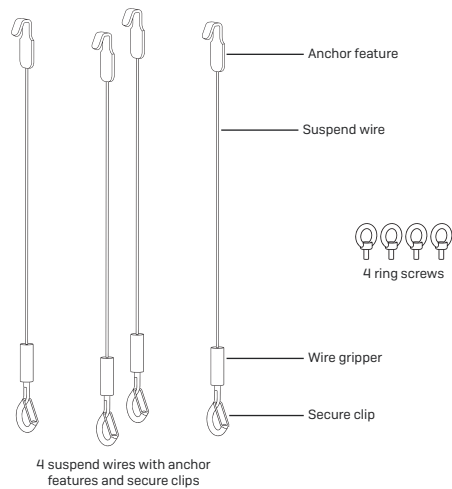


- Align the Access Point (with fix-plate) via the key holes to the main bracket and push it to the end in the sliding-slot.

### Suspend mount

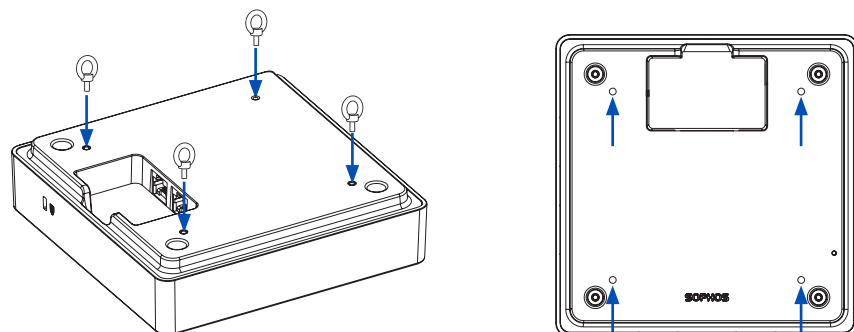
For suspend mounting, please use the “suspend mounting kit” which is available as an option from your Sophos partner. The suspend mounting kit must be installed by a skilled installer.

The kit consists of the following components:

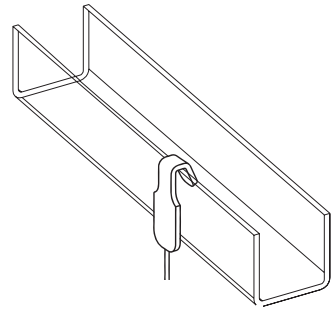


### Mounting instructions

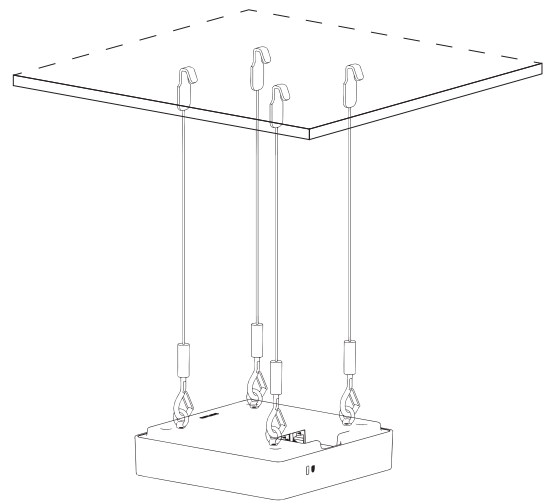
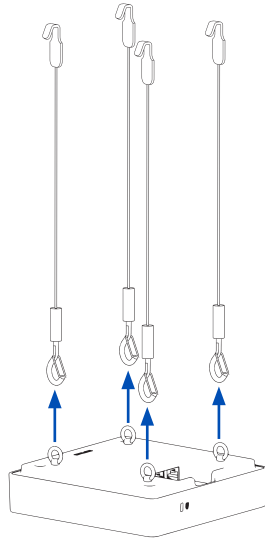
Screw the 4 supplied ring-screws (M3) into the bracket holes on the rear of the access point.



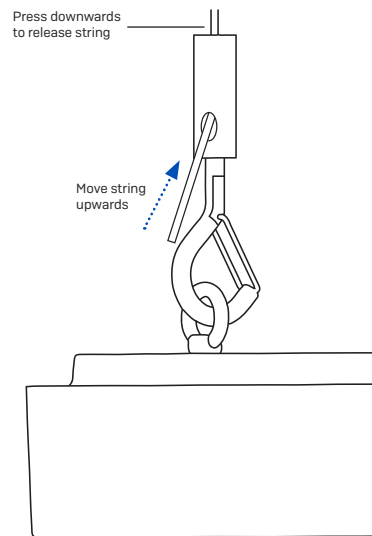
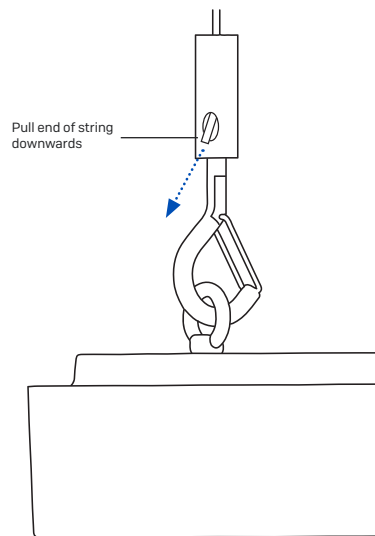




Find a suitable place on the ceiling to hang the 4 suspend-wires by using the anchor feature.



Lift the AP up, open the secure-clips, attach the hooks to the rings, and release the secure-clips to lock it.



In order to adjust the height of the AP upwards, pull the end of the string further out of the wire gripper. To adjust it downwards, press the top of the wire gripper to release the wire first.

## Serial Console Connection

You can connect a serial console to the Micro USB COM port of your Access Point. For example, you can use the HyperTerminal program which is included with most versions of Microsoft Windows to log onto the appliance console. Use an appropriate adapter to connect the console to your hardware appliance.

The required connection settings are:

- ▶ **Bits per second:** 115,200
- ▶ **Data bits:** 8
- ▶ **Parity:** N (none)
- ▶ **Stop bits:** 1
- ▶ **Flow Control:** None

Access via the serial console is activated by default on ttyS1.

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