2.4GHz/5GHz 300Mbps Outdoor CPE

Pharos CPE Series Datasheet



Highlights

-Wireless N speed up to 300Mbps

-Selectable bandwidth of 5/10/20/40MHz

-Adjustable transmission power by 1dBm

-Broad operating frequency channels ensure less wireless interference

-Built-in 2×2 dual-polarized directional MIMO antenna

-Passive PoE Adapter supports up to 60 meter (200 feet) Power over Ethernet deployment

-1 10/100Mbps Ethernet port for passive PoE (all CPE products) and 1 10/100Mbps Ethernet port for extended applications (CPE220/CPE520)

-TP-Link Pharos MAXtream (Time-Division-Multiple-Access) technology improves product throughput, capacity and latency performance, ideal for PtMP applications

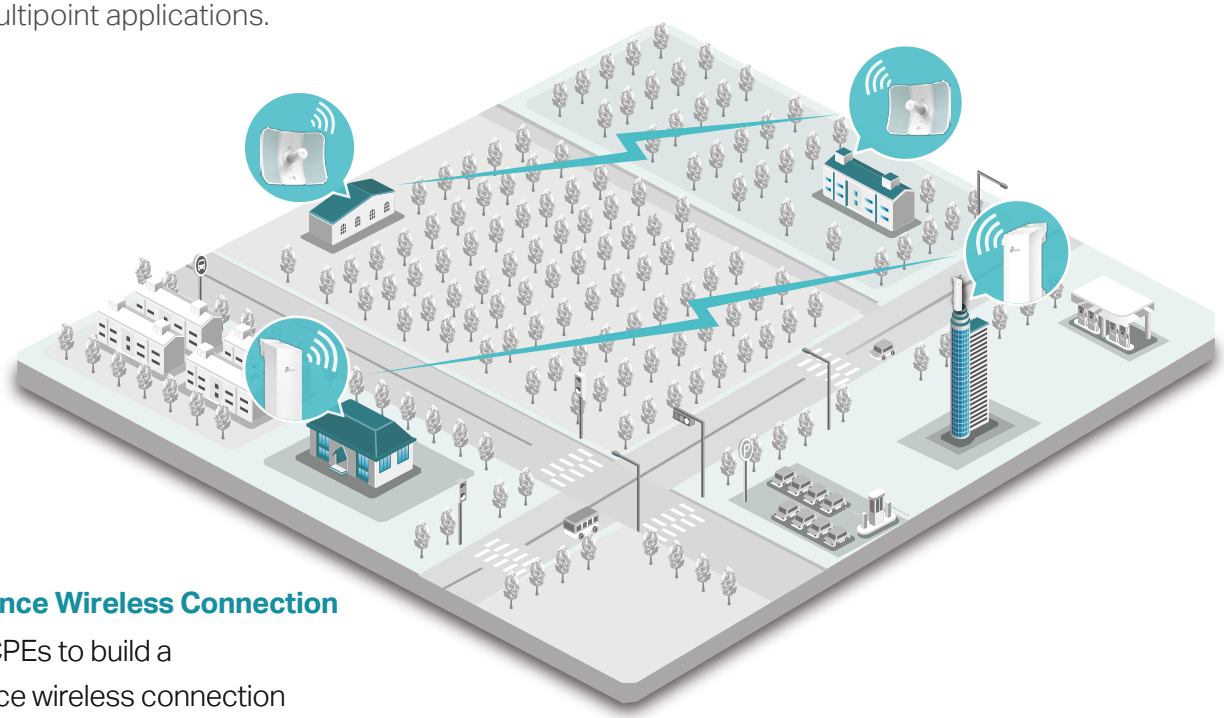
-Centralized Management System – Pharos Control



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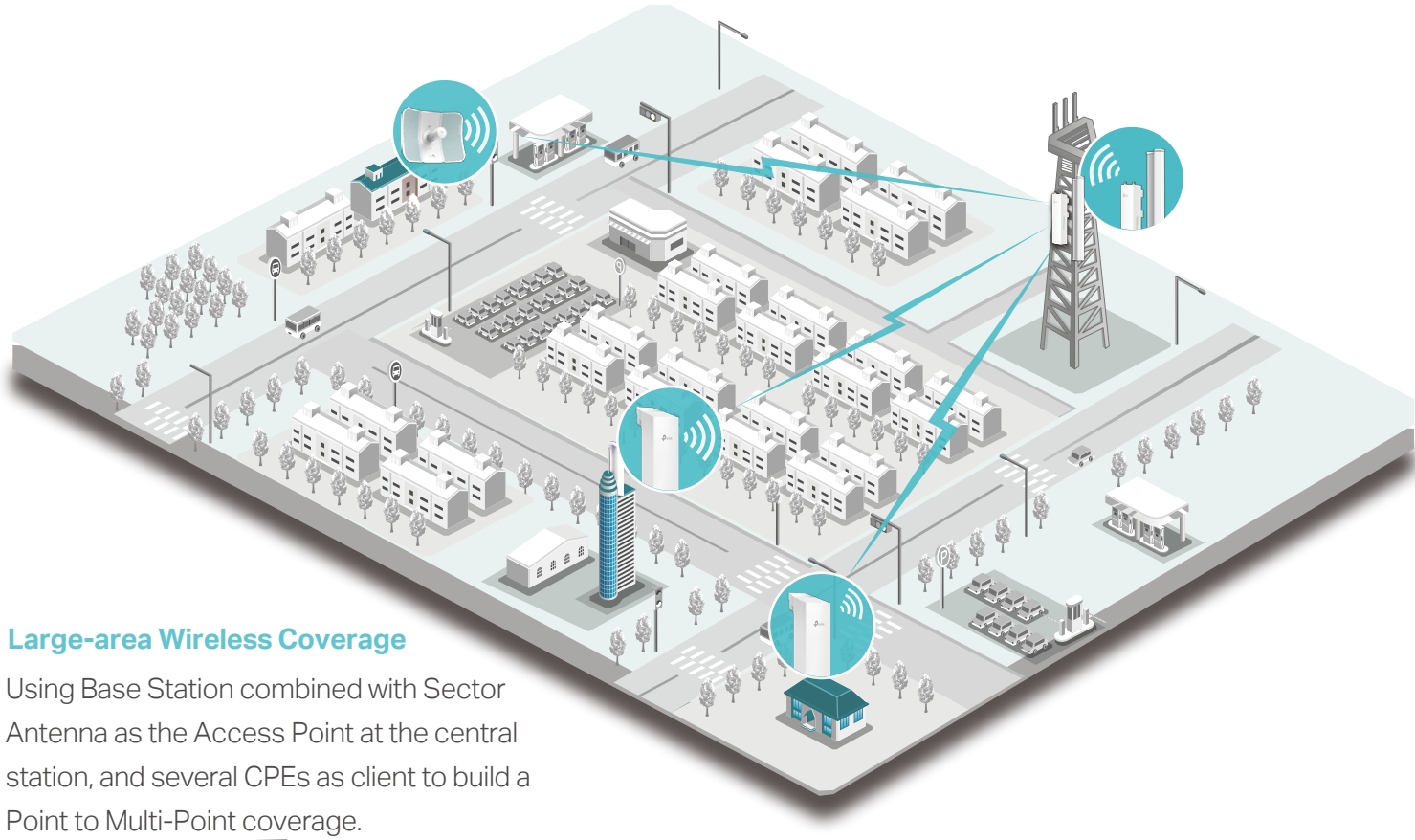
Typical Applications

TP-Link's Outdoor CPE is dedicated to reliable solutions for outdoor wireless networking applications. With its centralized management application, it is flexible and ideal for point-to-point and point-to-multipoint applications.



- **Long-distance Wireless Connection**

  Using two CPEs to build a long-distance wireless connection

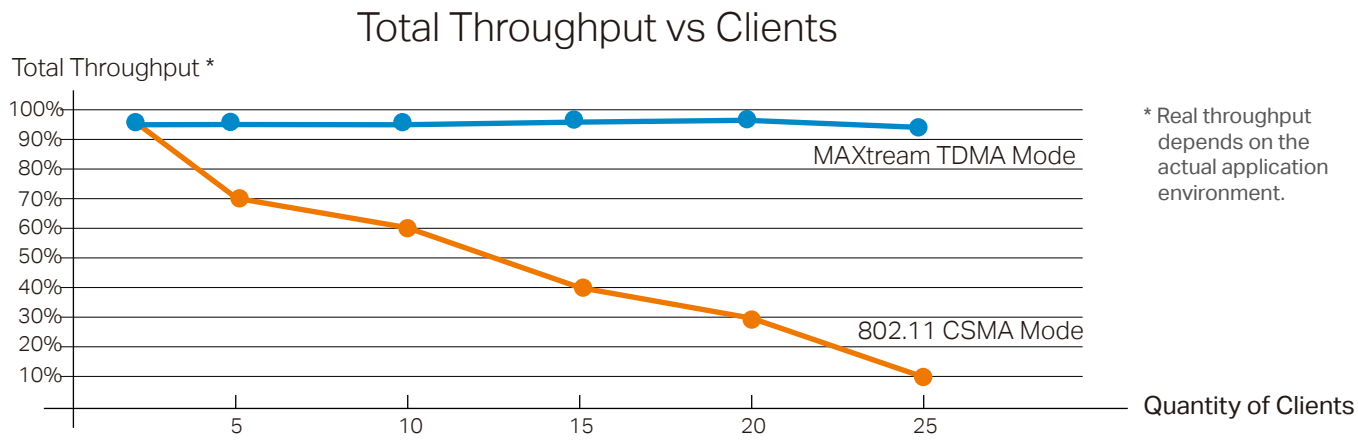


- **Large-area Wireless Coverage**

  Using Base Station combined with Sector Antenna as the Access Point at the central station, and several CPEs as client to build a Point to Multi-Point coverage.

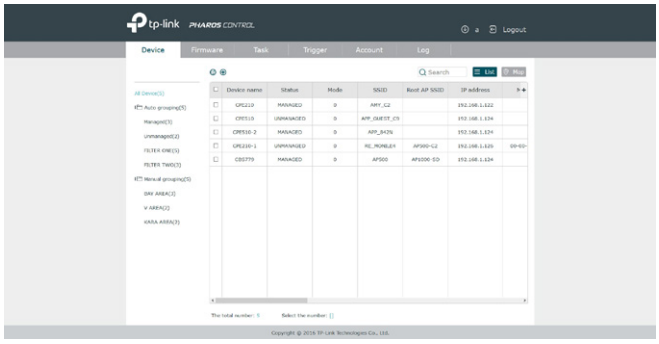
TP-Link MAXtream TDMA Technology

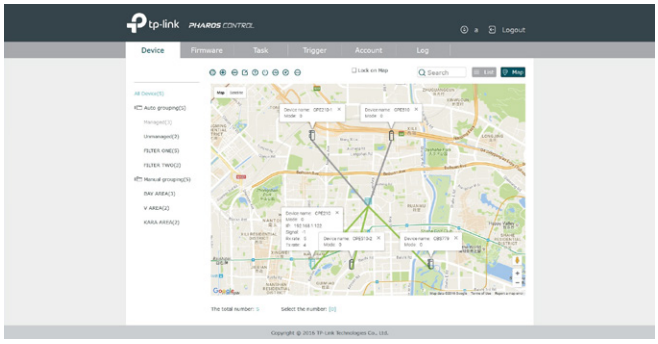
As network scale increases, wireless competition and collisions among outdoor devices will be so fierce that the real throughput of the network will drop, resulting in a serious impact on end-user experience, to mitigate these effects, TP-Link's Pharos series uses MAXtream TDMA Technology.



Pharos Control – Centralized Management System

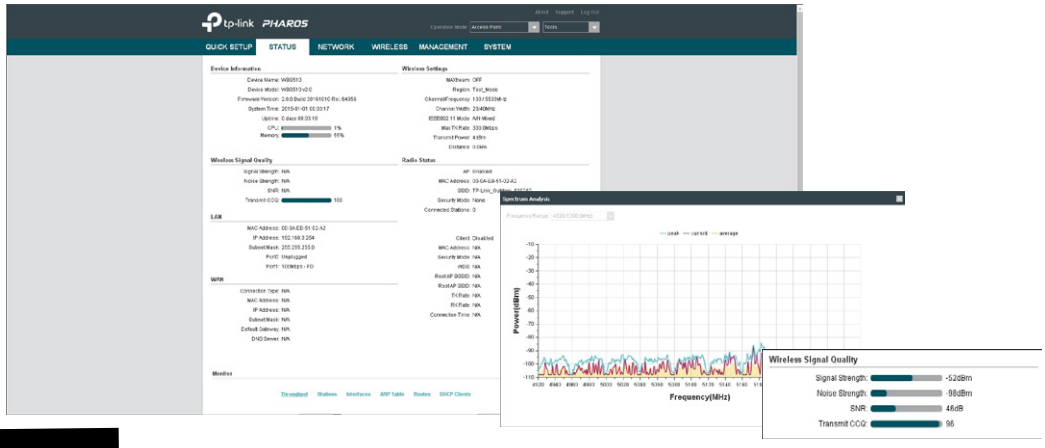
Pharos also comes equipped with centralized management software that helps users easily manage all the devices in their network from a single PC - Pharos Control. Functions like device discovery, status monitoring, firmware upgrading, and network maintenance can be managed using Pharos Control.





PharOS

User-friendly web-based management system allows professionals to do more specific configurations.



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Specifications

Features & Performance

Model		CPE210/CPE220	CPE510/CPE520/CPE610
Name		2.4GHz 300Mbps 9dBi/12dBi Outdoor CPE	5GHz 300Mbps 13dBi/16dBi/23dBi Outdoor CPE
Hardware Features	Processor	Qualcomm 650MHz CPU, MIPS 24Kc (CPE210, CPE220) Qualcomm 560MHz CPU, MIPS 74Kc (CPE510, CPE520, CPE610)	
	Memory	64MB DDR2 RAM, 8MB Flash	
	Antenna Gain	CPE210: 9dBi CPE220: 12dBi	CPE510: 13dBi CPE520: 16dBi CPE610: 23dBi
	Beamwidth	CPE210: 65° (Azimuth)/35° (Elevation) CPE220: 60° (Azimuth)/30° (Elevation)	CPE510: 45° (Azimuth)/30° (Elevation) CPE520: 45° (Azimuth)/30° (Elevation) CPE610: 9° (Azimuth)/7° (Elevation)
	Interfaces	CPE210/CPE510: 1 10/100Mbps Shielded Ethernet Port (LAN/POE) 1 Grounding Terminal 1 Reset Button	
		CPE220/CPE520: 1 10/100Mbps Shielded Ethernet Port (LAN0/POE) 1 10/100Mbps Shielded Ethernet Port (LAN1) 1 Grounding Terminal 1 Reset Button	
		CPE610: 1 10/100Mbps Shielded Ethernet Port (LAN/POE) 1 Reset Button	
	Power Supply	24VDC/0.5A Passive PoE (+4,5pins; -7,8pins)	
	Dimensions(L x W x H)	CPE210/CPE510: 224×79×60 mm CPE220/CPE520: 276×79×60 mm CPE610: 207×280×366 mm (No Mount)	
	Protection	15KV ESD Protection 6KV Lightning Protection	
	Enclosure	CPE210/CPE220/CPE510/CPE520: Material: Outdoor ASA stabilized plastic Weatherproof: IPX5 water and dust proof design	
		CPE610: Material: Outdoor PC stabilized plastic Weatherproof: IP65 water and dust proof design	
Wireless Features	Wireless Standards	IEEE 802.11b/g/n	IEEE 802.11a/n
	Proprietary Protocol	TDMA Mode (with Pharos MAXtream enabled)	
	Frequency[1]	2.4~2.483GHz	5.15~5.85GHz
	Wireless Speed	Up to 300Mbps (40MHz,Dynamic) Up to 144.4Mbps (20MHz,Dynamic) Up to 72.2Mbps (10MHz,Dynamic) Up to 36.1Mbps (5MHz,Dynamic)	
	Maximum Transmit Power[2]	CPE210: 25dBm/500mW (Adjustable power by 1dBm) CPE220: 30dBm/1000mW (Adjustable power by 1dBm) CPE510: 25dBm/200mW (Adjustable power by 1dBm) CPE520: 27dBm/500mW (Adjustable power by 1dBm	

[1] Available operation frequency may vary depending on the limitaion of the countries or regions in which the device is used.

[2] Maximum transmit power is limited by local regulatory settings

Features & Performance

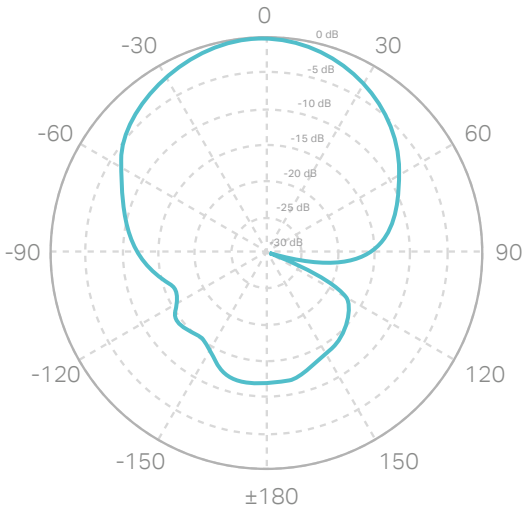
Model		CPE210/CPE220	CPE510/CPE520/CPE610
Name		2.4GHz 300Mbps 9dBi/12dBi Outdoor CPE	5GHz 300Mbps 13dBi/16dBi/23dBi Outdoor CPE
Software Features	Operation Modes	AP/Client/Bridge/Repeater/AP Router/AP Client Router (WISP Client)	
	Network Configurations	WAN: Static/Dynamic/PPPoE/L2TP/PPTP LAN: Static/Dynamic/DHCP Forwarding: ALG/UPnP/Virtual Server/Port Trigger Security: SPI Firewall/ Ping Forbidden/DoS Protection Access Control Static Routing Bandwidth Control IP & MAC Binding	
	Wireless Configurations	Pharos MAXtream TDMA Technology Selectable Channel Width: 5/10/20/40MHz Auto Channel Selection Transmit Power Control Dynamic Frequency Selection(DFS) WDS Enable/Disable Security: WPA/WPA2, WPA-PSK/WPA2-PSK (AES/TKIP) Encryption 64/128/152-bit WEP Encryption SSID Broadcast Enable/Disable Multi-SSID with VLAN Tagging (AP mode only) Distance/ACK Timeout Setting Wireless MAC Address Filter Wireless Advanced: Beacon Intevel/RTS Threshold/Fragmentation Threshold/DTIM Intevel/AP Isolation/Short GI/Wi-Fi Multimedia	
	Management	Discovery and Remote Management via Pharos Control application HTTP/HTTPS Web-based management System Log SNMP Agent (v2c) Ping Watch Dog Dynamic DDNS SSH Server	
	System Tools	Indicators: Signal Strength/Noise/Transmit CCQ/CPU/Memory Monitors: Throughput/Stations/Interfaces/ARP/Routes/WAN/DHCP Spectrum Analysis Speed Test Ping Traceroute	
	System-level Optimizations	IGMP Snooping/Proxy for multicast applications Hardware watch dog	

Features & Performance

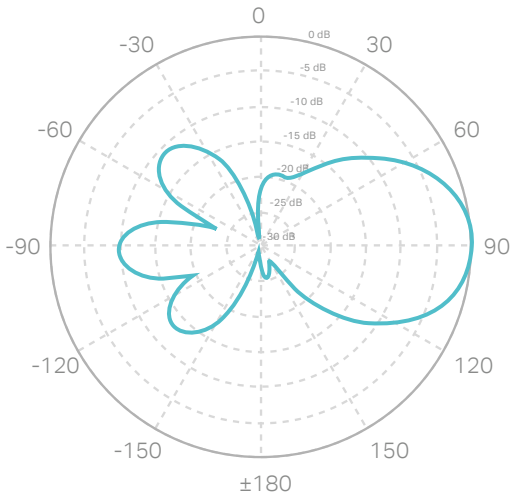
Model		CPE210/CPE220	CPE510/CPE520/CPE610
Name		2.4GHz 300Mbps 9dBi/12dBi Outdoor CPE	5GHz 300Mbps 13dBi/16dBi/23dBi Outdoor CPE
Others	Certification	CPE210/CPE220/CPE510/CPE520: CE, FCC, RoHS, IPX5 CPE610: CE, FCC, RoHS,IP65	
	Package Contents	Outdoor CPE 24V 0.5A Passive PoE Adapter Pole Mounting Strap AC Power Cord Quick Installation Guide	
	System Requirements	Microsoft Windows 98SE, NT, 2000, XP, VistaTM or Windows 10, Windows 8, Windows 7, MAC OS, NetWare, UNIX or Linux. Note: We recommend you to use one of following Web browsers for better experience: Google Chrome, Safari, Firefox. IE browsers are not recommended..	
	Environment	Operating Temperature: -40°C~70°C (-40°F~158°F) Storage Temperature: -40°C~70°C (-40°F~158°F) Operating Humidity: 10%~90% non-condensing Storage Humidity: 5%~95% non-condensing	
POE Adapter Features	Dimensions(WxDxH)	85.8×43.9×29.7mm	
	Input Voltage	100VAC-240VAC@50Hz-60Hz	
	Input Current	0.4A Max @ 100VAC	
	Output Voltage	24VDC(+4,5pins; -7,8pins)	
	Output Current	0.5A Max	
	Efficiency	>84.29%	
	Interfaces	1 AC Jack with Earth Ground 1 10/100/1000Mbps Shielded Ethernet Port (Power + Data) 1 10/100/1000Mbps Shielded Ethernet Port (Data)	
	Power LED	Green	
	Certifications	CE/FCC/BSMI/UL/CB/CEC/DOE/NRCan/SAA/KC/ERP/MEPS/S-mark/PSB/PSE/GS	

CPE210 Antenna Patterns

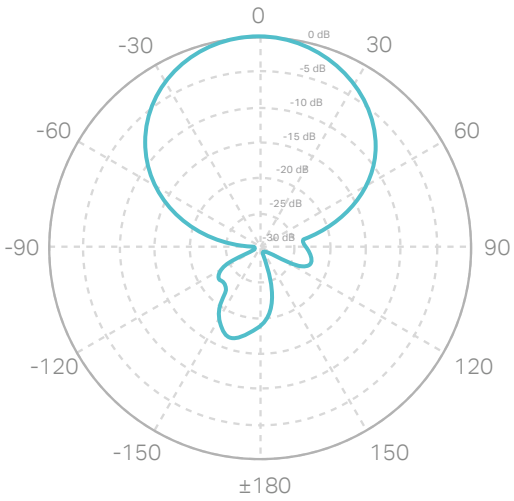
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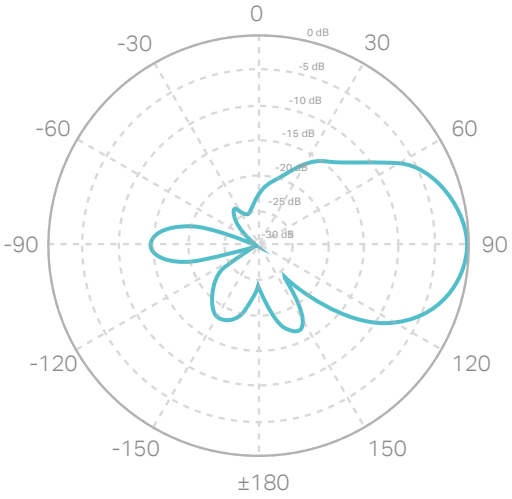
Vertical Elevation



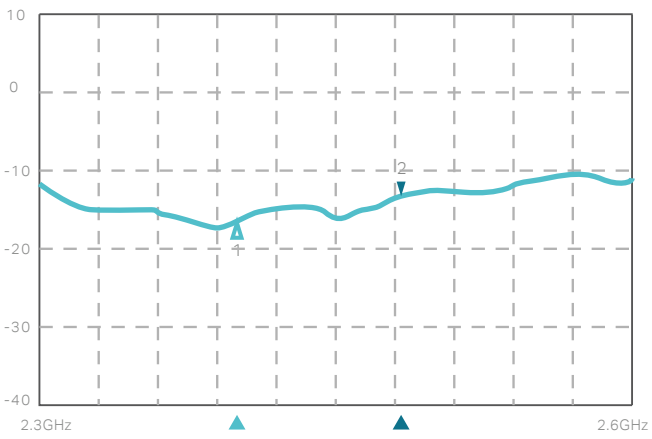
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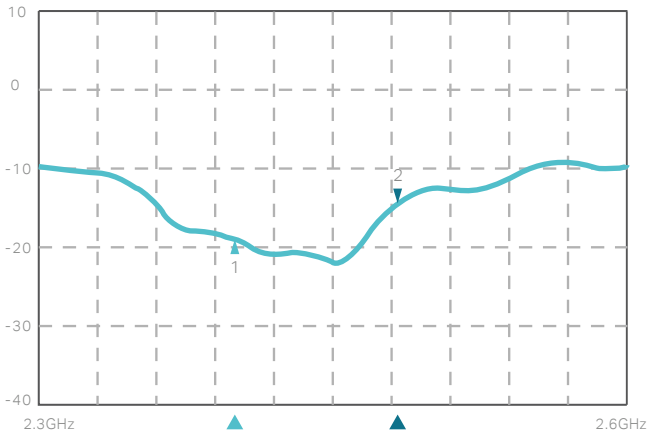
Horizontal Elevation



Return Loss –Vertical Polarization



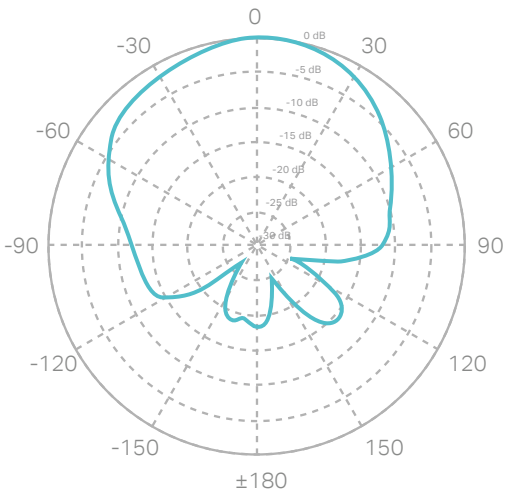
Return Loss – Horizontal Polarization



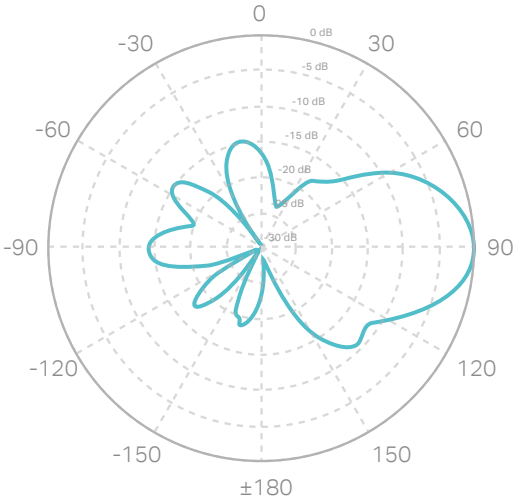
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CPE220 Antenna Patterns

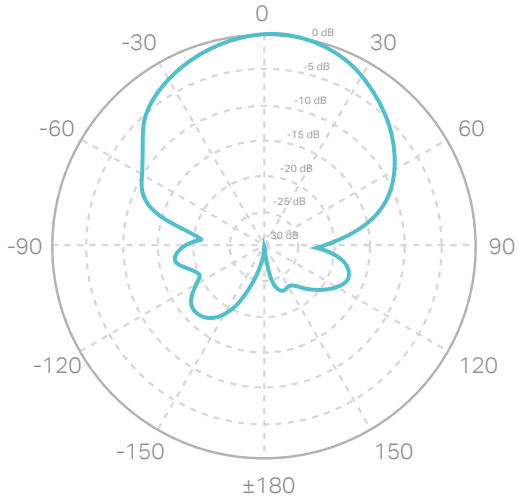
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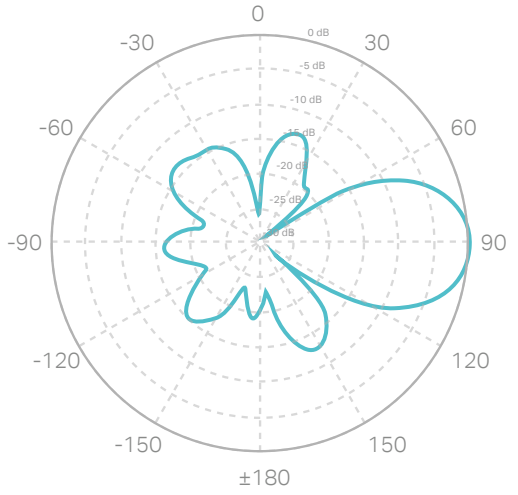
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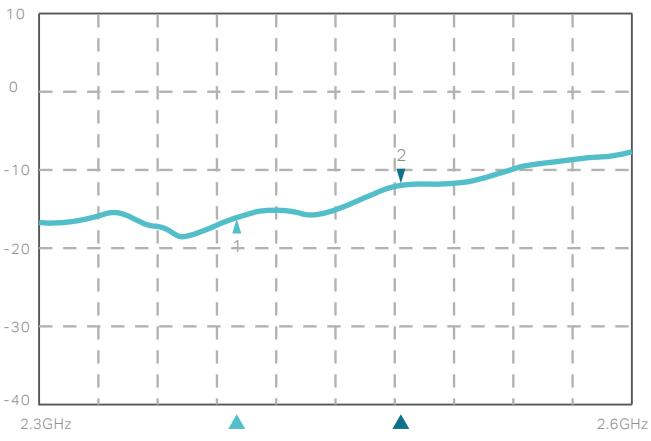
Horizontal Azimuth



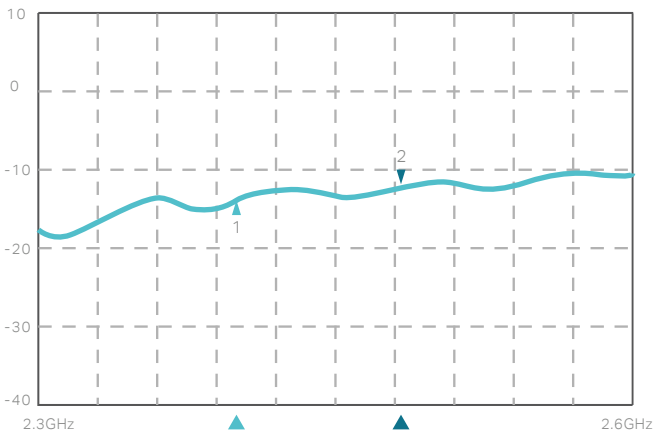
Horizontal Elevation



Return Loss –Vertical Polarization



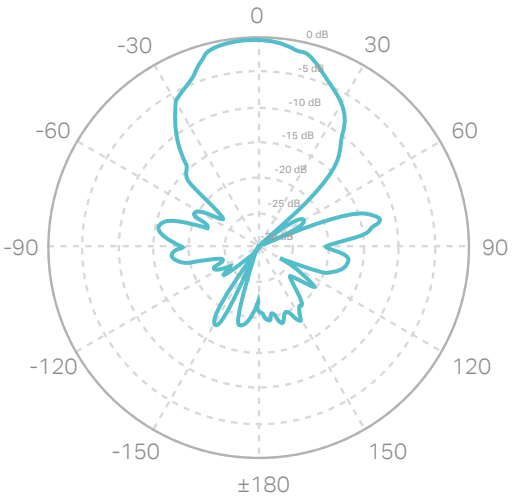
Return Loss – Horizontal Polarization



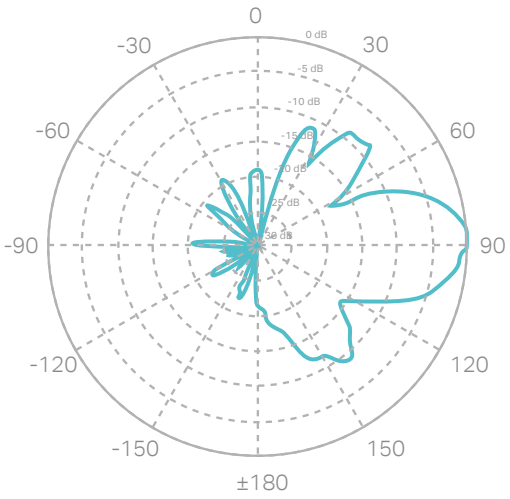
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CPE510 Antenna Patterns

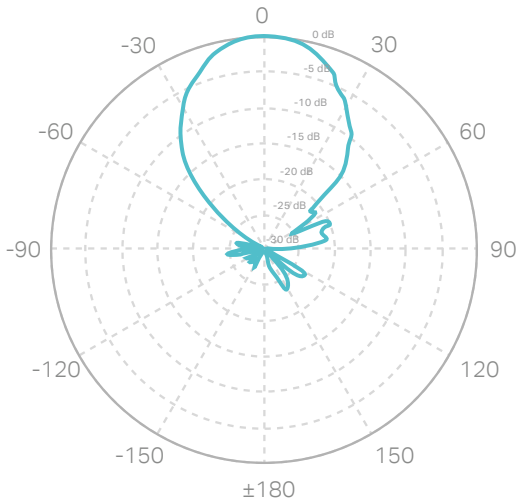
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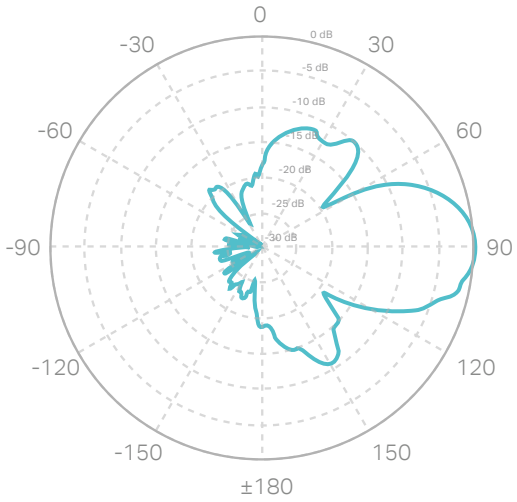
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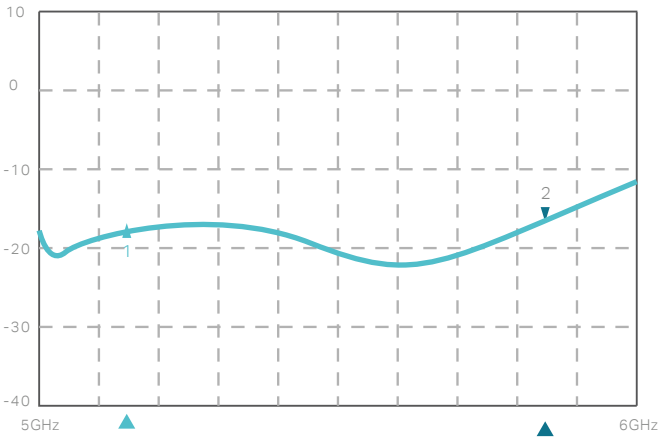
Horizontal Azimuth



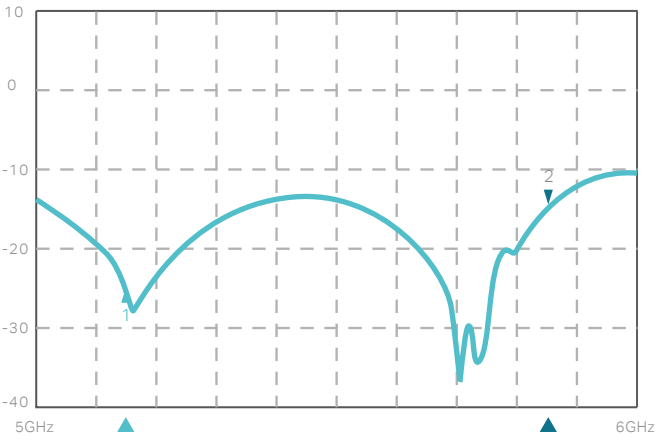
Horizontal Elevation



Return Loss –Vertical Polarization



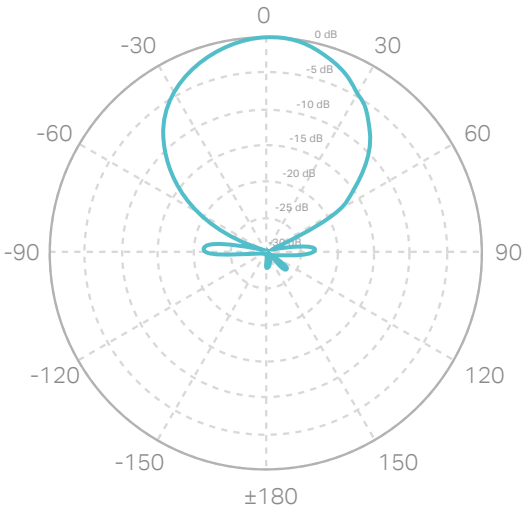
Return Loss – Horizontal Polarization



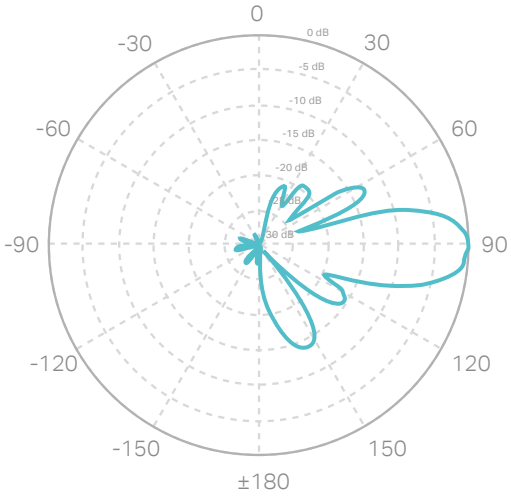
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CPE520 Antenna Patterns

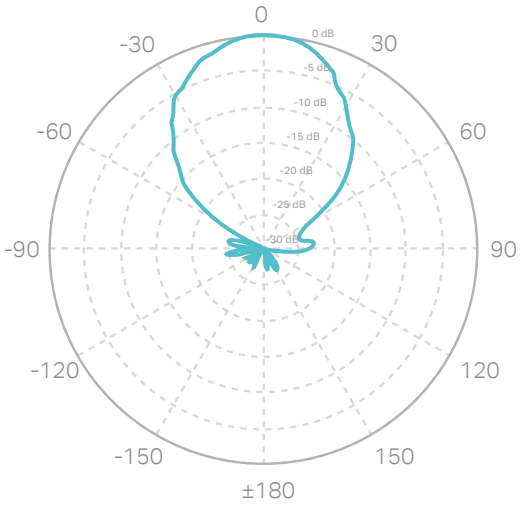
Vertical Azimuth



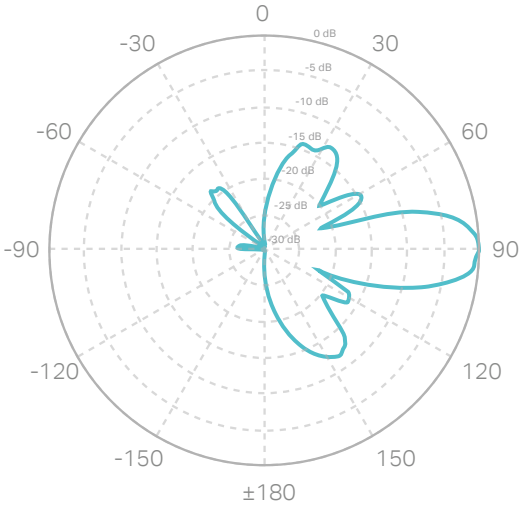
Vertical Elevation



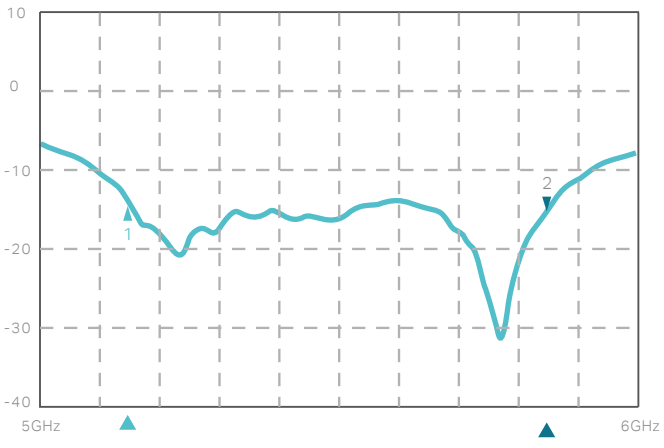
Horizontal Azimuth



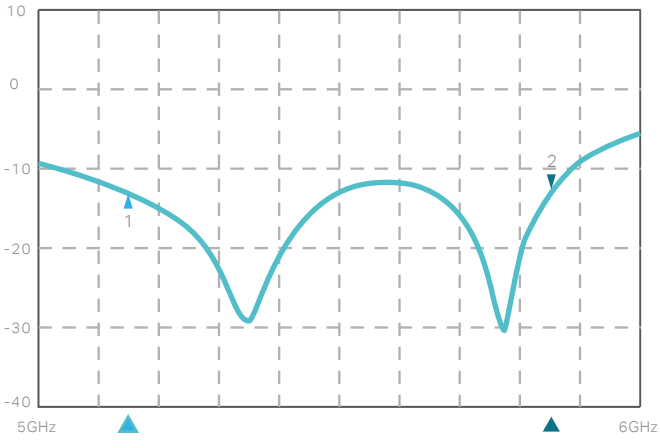
Horizontal Elevation



Return Loss –Vertical Polarization



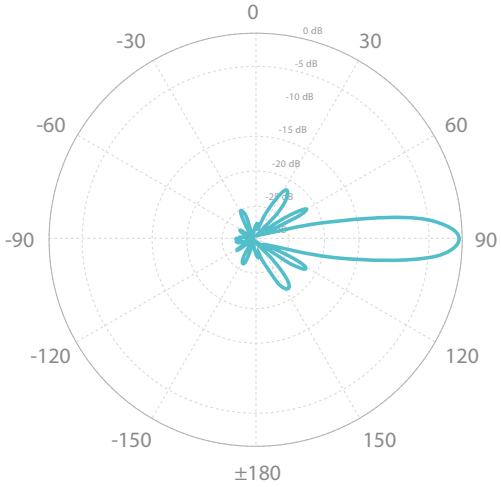
Return Loss – Horizontal Polarization



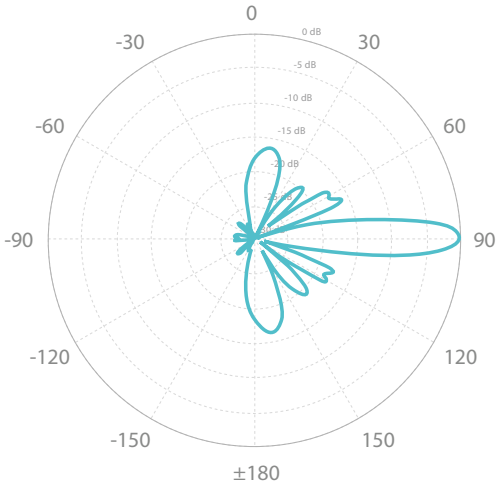
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CPE610 Antenna Patterns

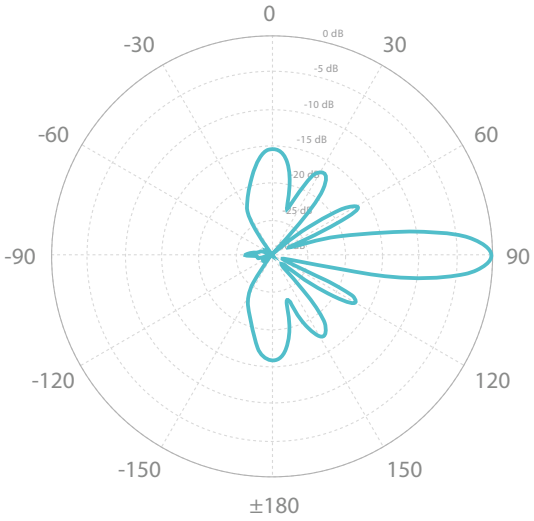
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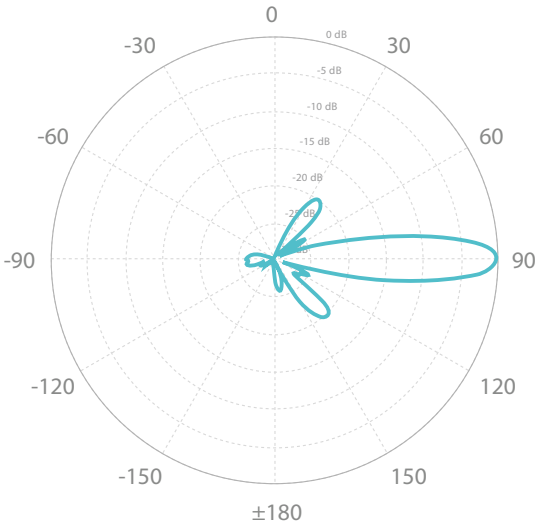
Vertical Elevation



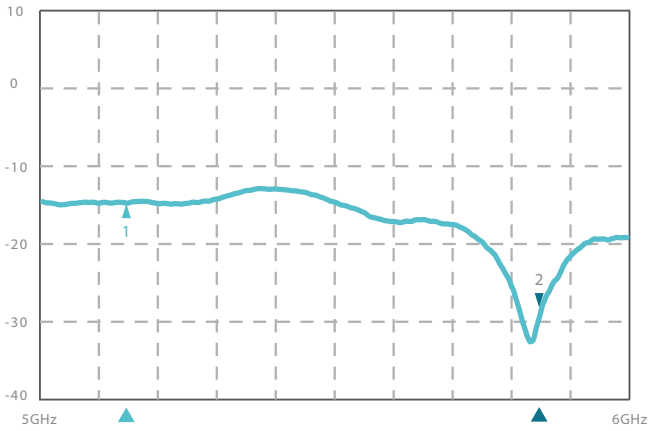
Horizontal Azimuth



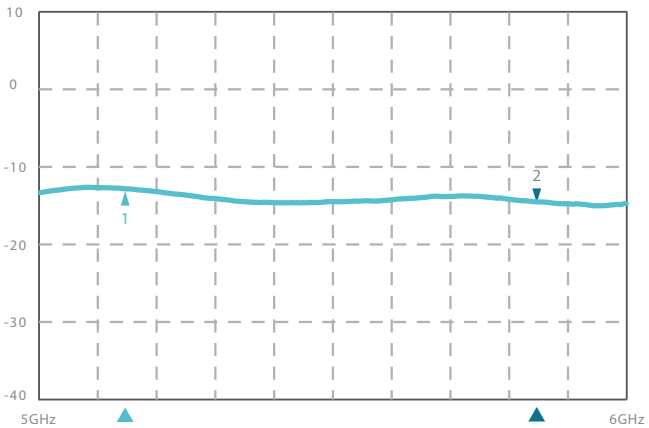
Horizontal Elevation



Return Loss –Vertical Polarization



Return Loss – Horizontal Polarization



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