

Transparent | VLAN/QoS | Carrier-grade QoS
Zero-touch provisioning | FIPS 140-2/3 options
Dual-radio redundancy | Traffic/ITS mounting kits



High-Performance Outdoor Connectivity

The ADE Broadband Outdoor series is an excellent outdoor Point-to-Point (PtP) and Point-to-Multipoint (PtMP) solution, which is perfect for Internet Service Providers (ISPs) and Smart Cities. It comes equipped with dual 5GHz radios that deliver high-performance throughput, providing up to 2 Gbps in challenging Radio Frequency (RF) environments.

Simplified Setup and Configuration

ADE radios incorporate a dedicated configuration radio, which is paired with a user-friendly mobile app to simplify the setup and configuration of PtP and PtMP links. This integration facilitates easy antenna alignment and efficient troubleshooting, allowing for quick and effortless installation, even in challenging locations.

GPS Integration for Enhanced Network Management*:

Equipped with built-in GPS, ADE radios ensure precise device placement and effective network mapping. This is crucial for PtP/PtMP setups, asset management, and network integration through auto-discovery features.

Rugged Design and Advanced Security

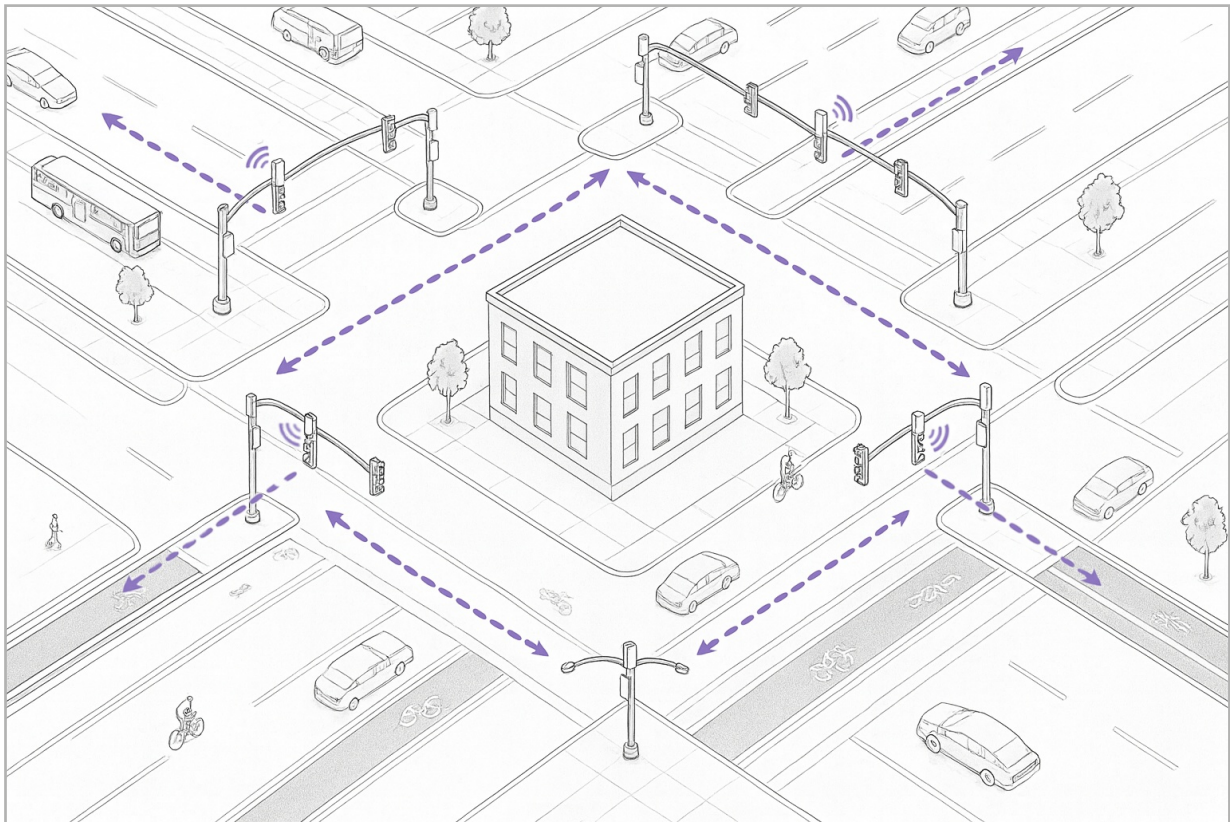
ADE is a rugged outdoor system that is designed to withstand harsh environmental conditions. It comes with an IP67 rating for resilience and features a Dying Gasp module for detecting power failures. The system places a high priority on security by utilizing AES-256 encryption for reliable and secure communication. With the NMS, you can enjoy comprehensive web-based monitoring and management, while auto-provisioning enables efficient large-scale deployments.

Intelligent Performance Management

ADE boasts intelligent RF and Quality of Service (QoS) management, which allows it to adapt to various conditions and ensure optimal performance for diverse ISP services. This product expertly blends high performance, simplified installation, and robust security, making it a perfect choice for reliable and efficient wireless connectivity in PtP/PtMP applications.

Features & Benefits

- **MAC Protocol:** Proprietary PtP and PtMP scheduler for outdoor dense RF deployments.
- **Mobile App Radio Tuning:** Integrates a 2.4 GHz radio with a mobile app for easy PtP/PtMP setup, efficient antenna alignment, and streamlined troubleshooting.
- **Enhanced Connectivity:** Employs 802.11ax technology with OFDMA, Beamforming, and MU-MIMO for improved throughput and coverage.
- **High-efficiency 5GHz Radios:** Offers high link capacity, ideal for Dual Sector and repeater mode PtP and PTMP setups deployments, and supports up to 16 devices in PtMP setups.
- **Automatic RF Corrections:** Enhances network resilience by improving stability and reducing interruptions.
- **Quick Outage Response*:** Features a Dying Gasp module for prompt alerts and response to power-related issues
- **Dynamic Data Rates:** Adjusts transmission speeds based on signal quality for reliable and efficient connections.
- **Auto & Dynamic Channel Selection:** Automatically chooses optimal channels to avoid interference and enhance signal quality.
- **Superior QoS over RF Links:** Prioritizes critical traffic to ensure high service quality and better user experience.
- **Multi-Tenant Network Efficiency:** Utilizes VLAN, Q-in-Q, and filtering to manage multi-tenant networks effectively and reduce congestion.
- **Centralized NMS:** Offers a comprehensive web-based platform for network performance, health, and security management.
- **Auto Provisioning:** Streamlines large-scale network deployments with easy, centralized control.
- **Smart Network Mapping*:** Built-in GPS enables auto-discovery and detailed network topology insights.
- **IP67-Rated Casing*:** Ensures durability against harsh environmental conditions, prolonging device lifespan.
- **Uncompromised Security:** Ensures top-tier data protection with AES-256 encryption.
- **High Gain Integrated Directional Antenna*:** Extends wireless networks up to 4 miles point-to-point.
- **3-Axis Pivoting Arm*:** Locks for precise alignment.



Technical Specifications

Broadband Outdoor Access Point					
Model Number	ADE655		ADE655-C18	ADE600	ADE610
Description	Outdoor 5GHz Dual Radio 2x2 Access Point with N-Type Connectors		Outdoor 5GHz Dual Radio 2x2 Access Point with 18dBi Panel Antenna	Outdoor 5GHz 2x2 CPE with 16dBi Patch Antenna	Outdoor 5GHz 2x2 CPE with 19dBi Patch Antenna
Chipset	Qualcomm Chipset - Dual Core CPU, ARM A53, 1.0 GHz			IPQ5018+QCN6102, QCA8337	
Standards	IEEE 802.11ax on 5 GHz			IEEE 802.11a/n/ac/ax on 5 GHz	
Memory	DDR3 1GB, Flash 32 MB, eMMC 8GB			DDR3 4GB, Flash 1GB	
GPS	On board GPS with integrated Antenna, 1PPS pulse, GPS Synchronization			-	
Dying Gasp	40ms (Max)			-	
Thermal Sensor	To monitor board temperature			-	
Compass sensor (magnetometer)	Antenna Alignment			-	
Bluetooth*	For Radio Management			-	
Antenna	2x 2.4GHz: 3.5dBi (Integrated Omni-Directional) 2x 5GHz (Radio1): N-Type Connector 2x 5GHz (Radio2): N-Type Connector"	2x 2.4GHz: 3.5dBi (Integrated Omni-Directional) 2x 5GHz (Radio1): 18dBi Integrated Panel Antenna 2x 5GHz (Radio2): N-Type Connector		2x 2.4GHz: - 2x 5GHz -: 16dBi	2x 2.4GHz: - 2x 5GHz -: 19dBi
External Antenna Connector Type	N-Type Female			-	
Physical Interfaces	1x 1G LAN-1 port (802.3at PoE) 1x 2.5G LAN-2 port (Proprietary PoE)			1 x 10/100/1000 BASE-T(Proprietary PoE) 1 x 10/100/1000 BASE-T Proceed reset and reboot when pushing this button	
Power Source	IEEE802.3at or Proprietary 48V/1A or Direct DC Input up-to 56V LAN2 Port			Proprietary 54V (EPA5006GR)	
Operation Modes	AP/STA Base Station (BSU), Subscriber (SU)			base station(BSU)/subscriber(SU)	
Max Subscribers	16 per radio			32 per radio	
MAC Protocol	Proprietary polling based OFDMA Scheduling Protocol			Proprietary polling based OFDMA Scheduling Protocol	
Frequency Bands	5.1 GHz - 5.9 GHz (Broadband Connectivity) 2.4 GHz / Bluetooth (Radio Management)			5 GHz: 5150 MHz ~ 5250 MHz, 5250 MHz ~ 5350 MHz, 5470 MHz ~ 5725 MHz, 5725 MHz ~ 5850 MHz	
Channel Bandwidth	20 / 40 / 80 / 160 MHz			20 / 40 / 80 / 160 MHz	
Channel Spacing	5 MHz			5 MHz	
Max Transmit Power	Up to 27 dBm (Combined)			Up to 26 dBm (Combined)	
Dynamic Data Rate Selection (DDRS)	Automatically detect optimal data rate for given link				
Dynamic Channel Selection (DCS)	Selects optimal channel to operate to maintain SLAs (CIR & MIR)				
Auto Transmit Power Control (ATPC)	Automatically adapt the transmit power				
Interference Mitigation	Auto Channel Selection(ACS), Dynamic Channel Selection(DCS), Background Scan(BG Scan) features aid to adapt to varying RF medium				
Encryption	AES 256				
Spectrum Analyzer	Provides RF medium statistics				
Radio Chains	Dual 2x 2:2				
Supported Modulation	802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM				

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Ethernet	1x GE PoE+ 1x 2.5GE Proprietary PoE		1x GE Proprietary PoE Port 1x GE Port	
Speed	10/100/1000/2500Mbps, Half/Full Duplex, Auto Negotiation		10/100/1000Mbps, Half/Full Duplex, Auto Negotiation	
Jumbo Frame	9K bytes			
PoE Source	Passive 48V/1A, 6KV Surge Protection		Passive 54V /0.6A	
Cable Length	STP Cat5e: MAX 130 meters FTP Cat6: MAX 180 meters			
Surge Protection	6KV Surge Protection on all Ethernet Ports		1KV	
Maximum Power Consumption	21W		PoE: Max. 13W	PoE: Max. 11W
SNMP	v1, v2c, v3		v1, v2c, v3	
Authentication	Internal MAC Address Control List, Radius based Authentication		Internal MAC Address Control List, Radius based Authentication	
Traffic Shaping	Downlink and Uplink traffic shaping		Downlink and Uplink traffic shaping	
Remote	SSH, Web, TFTP, HTTP, HTTPS, Syslog		SSH, Web, TFTP, HTTP, HTTPS, Syslog	
Smart Phone	Android & IOS based Application for Radio Management		Android & IOS based Application for Radio Management	
Antenna Alignment	Alignment aid provided via variable audible tone generation algorithm			
Operating Mode	Bridging			
IP Stack	IPv4, IPv6			
VLAN Tagging	802.1Q: Transparent, Access, Trunk, Q-in-Q			
Gateway Features	DHCP Server			
MAC-in-MAC	To improve the multicast traffic performance, IGMP Snooping			
Ethernet-OAM	Fault Link Management			
Packet Filtering	MAC, IP, Protocol, Port			
NTP Server	Stratum 1 NTP Server using GPS – less than 1msec accuracy			
Asymmetric Bandwidth Control	Asymmetric UL/DL committed and maximum information rate per Service Flow			
Packet Classification Capabilities	802.1p priority, IPTOS, VLAN ID, IP addresses, ports, Ethernet addresses, IP protocol, and Ether Type. Support maximum 4 SFC's with maximum 32 PIR's			
Scheduling	Real Time priority-based services			
Temperature Range	Operation: -10°C to +60°C / -14°F to +140°F Storage: -30°C to +80°C / -22°F to +176°F		Operation: -4°~140°F/-20°C~60°C Storage: -40F°~176°F/-40°C~80°C	
Humidity (Non-condensing)	Operating: 90% or less Storage: 90% or less		Storage: 90% or less	
IP Rating (Outdoor only)	IP67		IP55	
Wind loading	200Kmph			
ESD Protection (Outdoor only)	Contact: 4KV Air: 8KV			
Weight	2.02 kgs / 4.45 lbs	1.91 kgs / 4.21 lbs	610g	558g

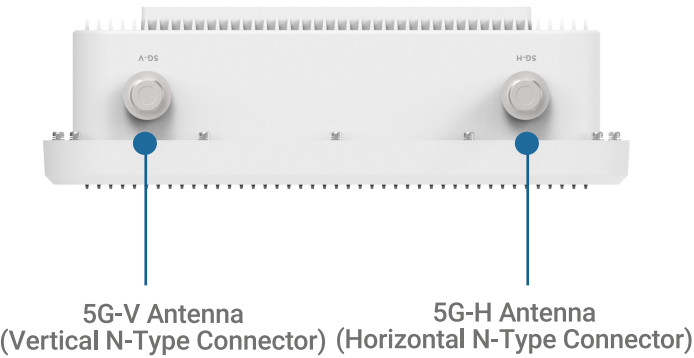
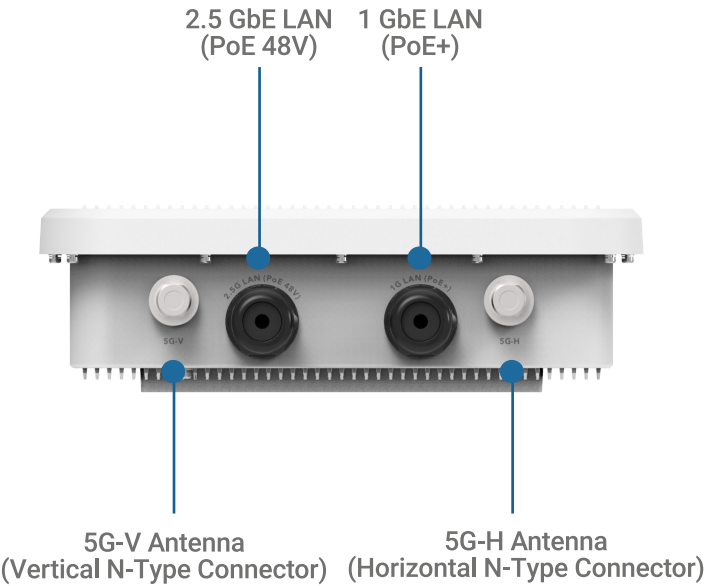
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Dimensions	267x227x82mm 267*258.1*82mm (w/n-type & cable gland)	267x227x82mm 267*255.1*82mm (w/n-type & cable gland)	260 x 84 x 55 mm	Φ190 x 38 mm
Package Contents	1 – Outdoor Access Point 1 – Pole-Mounting Brackets 1 – PoE Injector with AC Power Cable 1 – Ethernet Cable Cat5e 1.5 mts 1 – Grounding Cable 1.8 mts		1 – EPA5006GR with AC cord 2 – Pole-Mounting Brackets 1 – Wall-Mount Screw Set 1 – Product Card	1 – EPA5006GR with AC cord 2 – Pole-Mounting Brackets 1 – Wall-Mount Screw Set 1 – Product Card
Safety Compliance	CB			
WEEE	Yes			
RoHS	Yes			
Regulatory Compliance	FCC		FCC CE IC UKCA	
MTBF	100K hours			



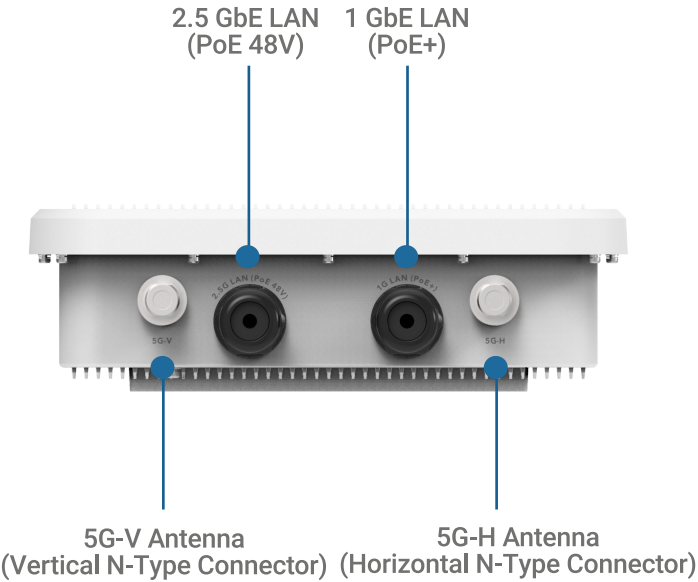
Product Views

ADE655



Product Views

ADE655-C18



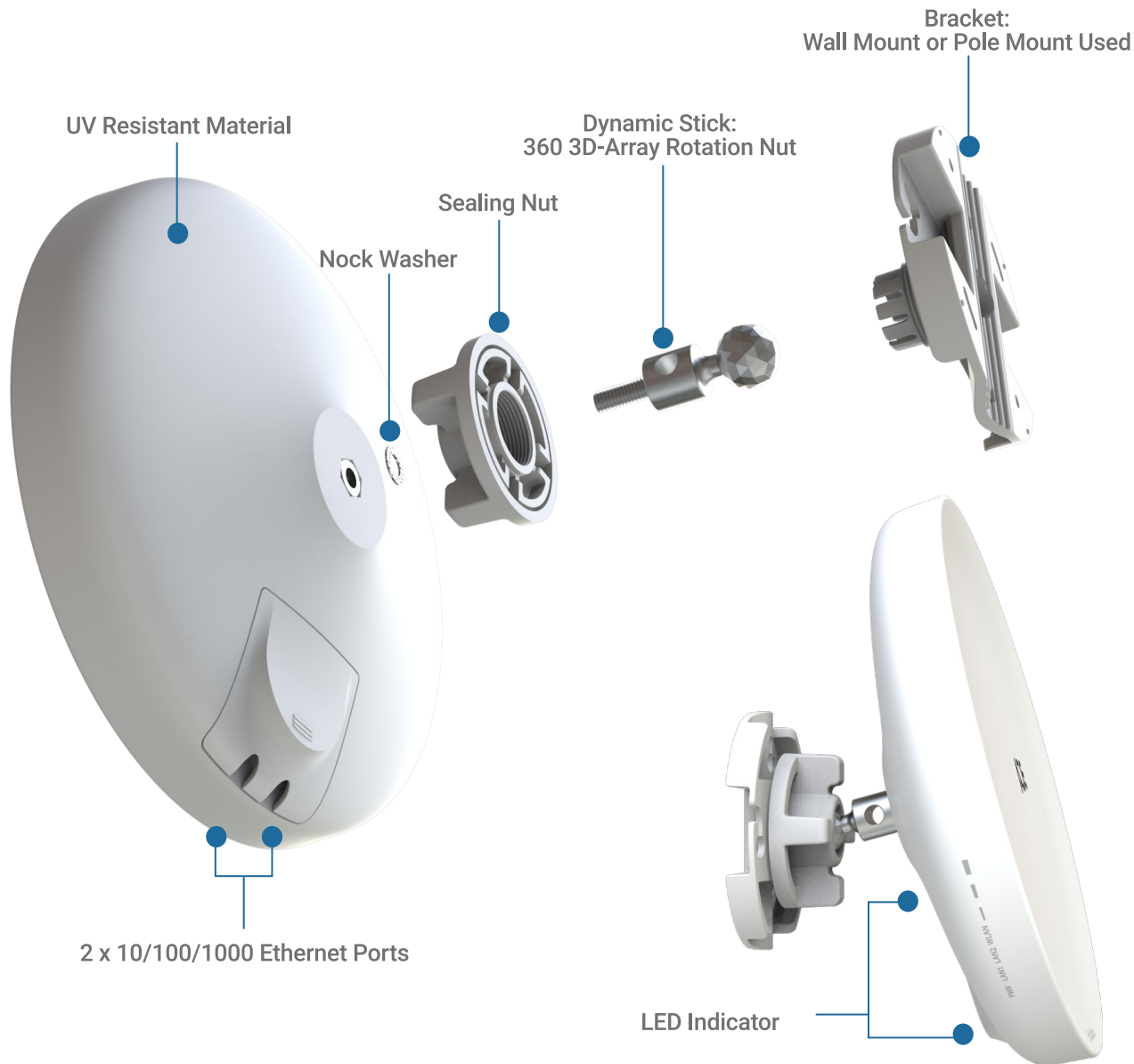
Product Views

ADE600



Product Views

ADE610

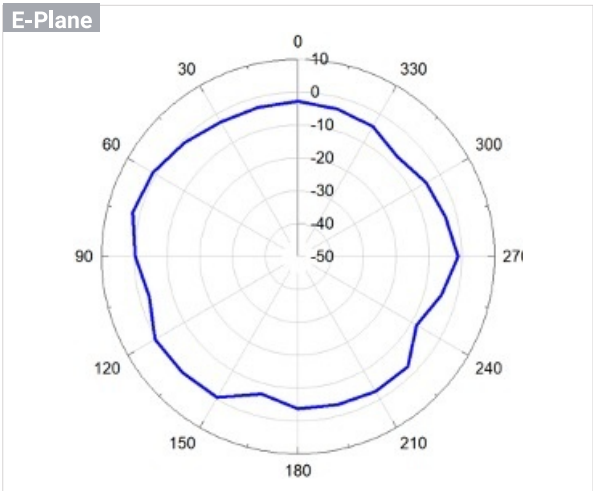


Antenna Patterns

ADE655

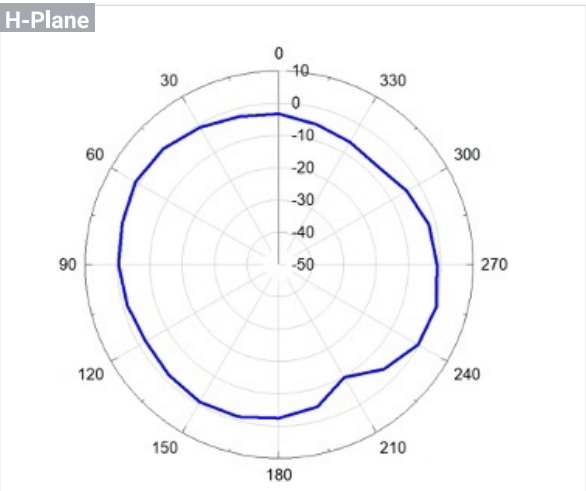
2.4GHz

E-Plane



2.4GHz

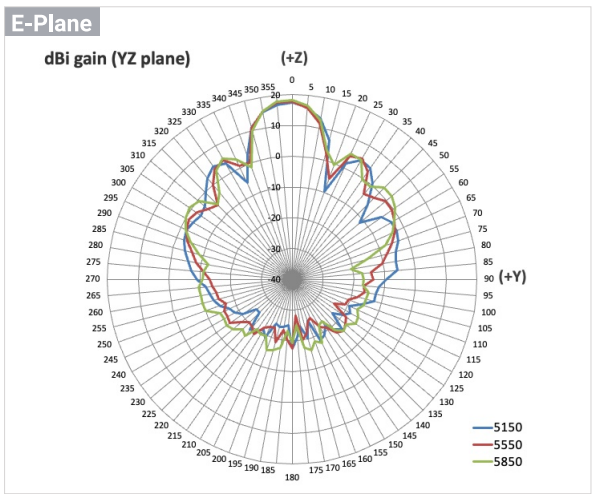
H-Plane



ADE655-C18

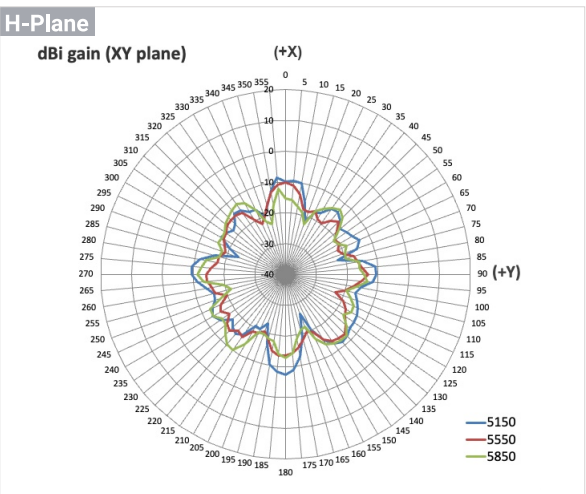
5GHz

E-Plane



5GHz

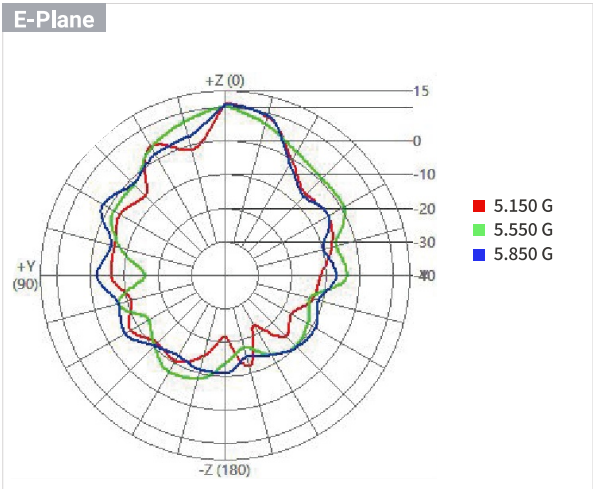
H-Plane



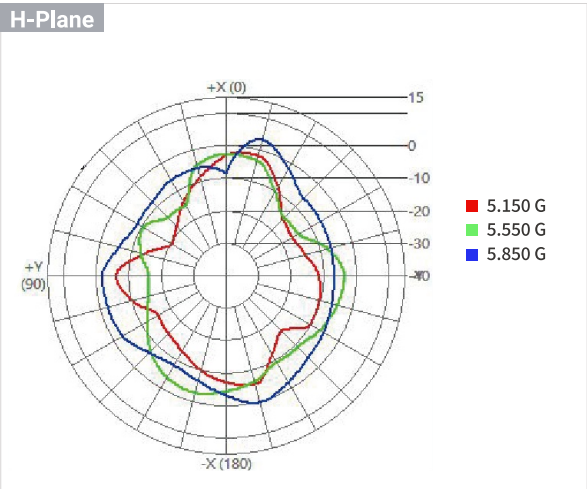
Antenna Patterns

ADE600

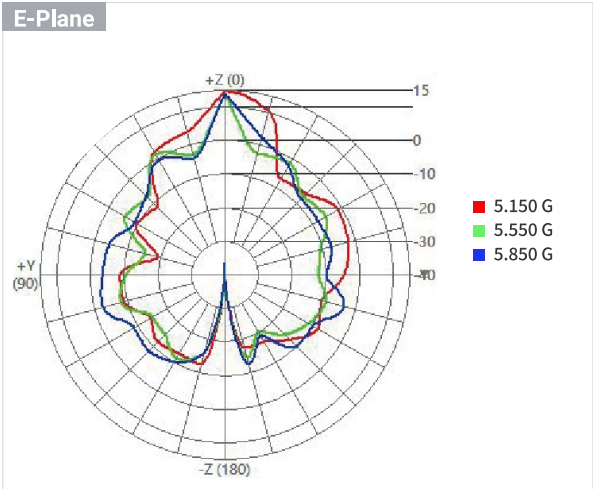
Port1



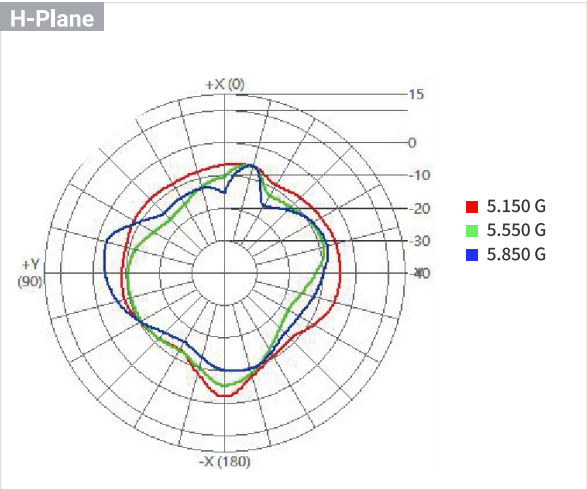
Port1



Port2



Port2

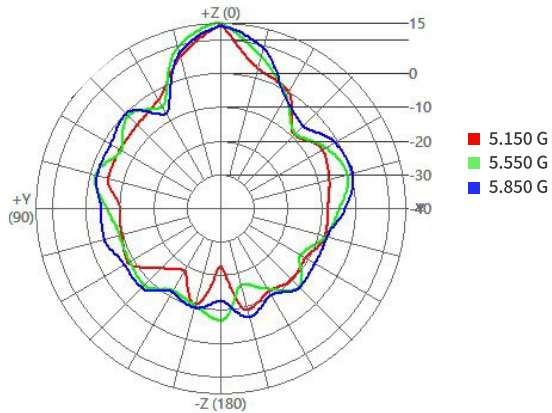


Antenna Patterns

ADE610

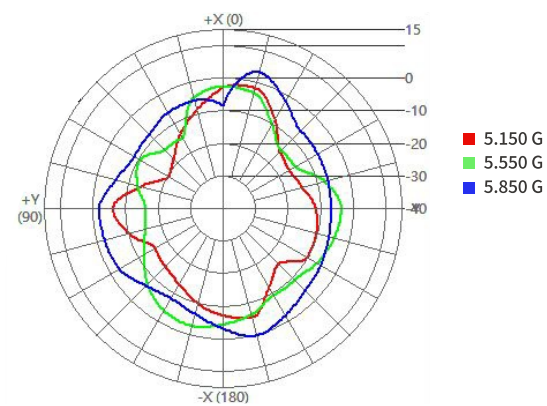
Port1

E-Plane



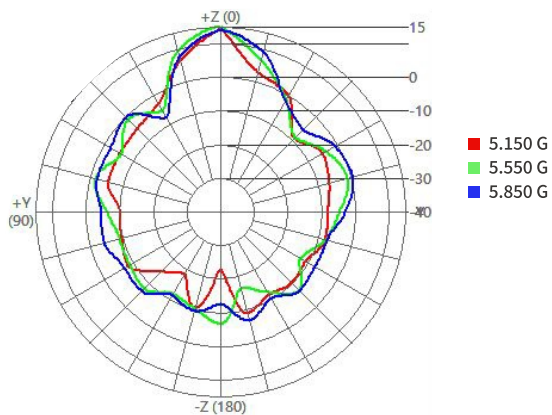
Port1

H-Plane



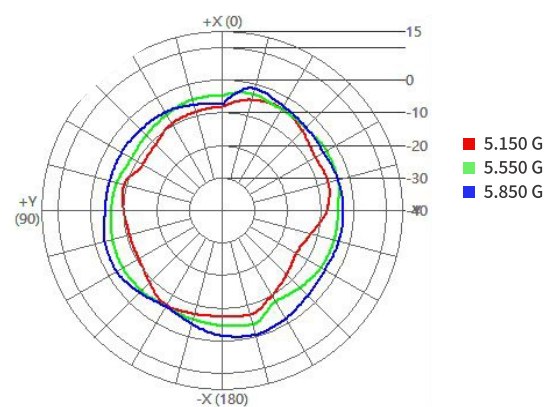
Port2

E-Plane



Port2

H-Plane



Automation & Data Engineering, Inc | California, USA

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Version 1.4