

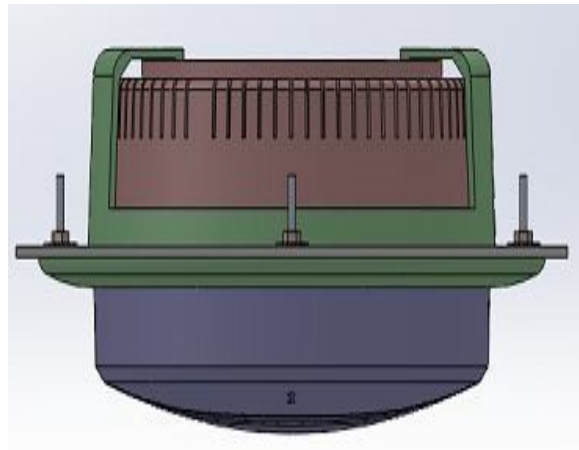
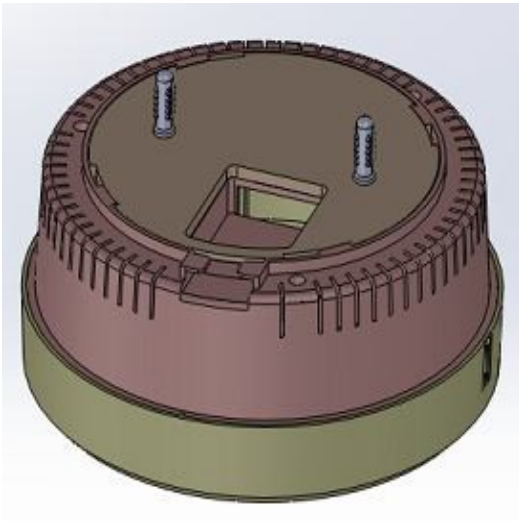
ZAP-680

Product Specification



IEEE 802.11 a/b/g/n/ac Wireless Concurrent Ceiling
Smart AP

2. Hardware Appearance



3.1 Hardware Specification

Table 3.1 Hardware Specification

Features	Additional Information		
Chipset	CPU/2G RF: QCA9558 5G RF: QCA9880 Ethernet Phy: QCA8334		
SPI Flash	1 * 16 Mbyte		
Memory (DDR II)	2 * 64 Mbyte		
Standard Compliance	IEEE 802.3u MDI / MDIX 10/100 Base-T Ethernet IEEE 802.11ab 1000 Base-T Ethernet IEEE 802.11b/g/n/ac Wireless LAN Standard		
Interfaces	2 * RJ45 support 10/100/1000 Mbps 1 * Reset Button 1 * Switch (SW Switchable)		
Ethernet Interface	2 * 10/100/1000 BASE-T RJ-45 Ethernet Connector LAN1 for Power over Ethernet (802.3af/at) with Cat5/5e/6 cable		
Antenna Type	2G -> Smart Antenna 5G -> Omni Antenna		
Antenna Pattern Number	2G -> 64 Patterns		
Antenna Gain	2G -> 5 dBi 5G -> 5 dBi		
POE Support	IEEE 802.3at Giga POE support		
LED Definition	PWR/SYS: Green/Yellow		
	Status		
	PRW	ON	Device is powered on
		OFF	Device is powered off
	SYS	ON	Device is operating, LAN is connected
		OFF	Device is operating, LAN is not connected
	WLAN: Green / Yellow		
	Status		
	WLAN1 (2.4G)	Flashing	2.4G radio enabled
		OFF	2.4G radio disabled
	WLAN2 (5G)	Flashing	5G radio enabled
OFF		5G radio disabled	
Anti-Static Grade	IEC61000-4-2(Criteria B) Air: ±8kV Contact: ±4kV		
Surge	EN-61000-4-5 Criteria: B 8/20 us Power line: L to L ±1KV L to G ±2KV Signal line: L to G ±0.5KV		
Current Consumption	≤ 25W		
Data Rate	- 802.11a: 6/9/12/18/24/36/48/54 Mbps & Auto fallback - 802.11b: 1/2/5.5/11 Mbps & Auto fallback - 802.11g: 6/9/12/18/24/36/48/54 Mbps & Auto fallback - 802.11n: up to 450Mbps - 802.11ac: up to 1300Mbps		

Data Modulation Type	IEEE 802.11 a/b/g <ul style="list-style-type: none"> DSSS (DBPSK, DQPSK, CCK) OFDM (BPSK, QPSK, 16-QAM, 64-QAM) IEEE 802.11gn <ul style="list-style-type: none"> OFDM (BPSK, QPSK, 16-QAM, 64-QAM) IEEE 802.11ac <ul style="list-style-type: none"> OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM) 				
Operation Frequency & Channels	IEEE 802.11b/g/gn 20MHz ISM Band <ul style="list-style-type: none"> USA (FCC): 2.412GHz~2.462GHz Europe (ETSI): 2.412GHz~2.472GHz Japan(ARIB) : 2.412GHz~2.472GHz IEEE 802.11gn 40MHz Band <ul style="list-style-type: none"> USA (FCC): 2.422GHz~2.452GHz Europe (ETSI): 2.422GHz~2.462GHz Japan (ARIB): 2.422GHz~2.462GHz IEEE 802.11a/an 20MHz/40MHz ISM Band <ul style="list-style-type: none"> USA (FCC): 5.15GHz~5.25GHz; 5.725GHz~5.85GHz Europe (ETSI): 5.15GHz~5.35GHz; 5.47GHz~5.725GHz Japan (ARIB): 5.15GHz~5.35GHz; 5.47GHz~5.725GHz 				
Output Power ¹	IEEE 802.11b	1~11Mbps		20	
	IEEE 802.11g	6~54Mbps		20	
	IEEE 802.11an	HT20	MCS 0~23	23	
		HT40	MCS 0~23	23	
	IEEE 802.11a	6~48Mbps	5180 - 5240	17	
			5260 - 5320 - 5500 5600 - 5745 - 5825	20	
		54Mbps	5180 - 5240	15	
			5260 - 5320 - 5500 5600 - 5745 - 5825	18	
	IEEE 802.11an	HT20	MCS 0~6, 8~14, 16~22	5180 - 5240	20
				5260 - 5320 - 5500 5600 - 5745 - 5825	23
			MCS 7/15/23	5180 - 5240	18
				5260 - 5320 - 5500 5600 - 5745 - 5825	21
		HT40	MCS 0~6, 8~14, 16~22	5180 - 5240	20
				5260 - 5320 - 5500 5600 - 5745 - 5825	21
				5180 - 5240	23
				5260 - 5320 - 5500 5600 - 5745 - 5825	23
	MCS 7/15/23		5180 - 5240	18	
			5260 - 5320 - 5500 5600 - 5745 - 5825	21	
			5180 - 5240	17	
			5260 - 5320 - 5500 5600 - 5745 - 5825	20	
IEEE 802.11ac	HT20	MCS 0~6	5180 - 5240	17	
			5260 - 5320 - 5500 5600 - 5745 - 5825	20	
			5180 - 5240	15	
		MCS 7	5260 - 5320 - 5500 5600 - 5745 - 5825	18	
			MCS 8	5180 - 5240	14
				5260 - 5320 - 5500 5600 - 5745 - 5825	16

	IEEE 802.11ac	VHT40	MCS 0~6	5180 - 5240	17
				5260 - 5320 - 5500	20
				5600 - 5745 - 5825	
			MCS 7	5180 - 5240	15
				5260 - 5320 - 5500	18
				5600 - 5745 - 5825	
		MCS 8	5180 - 5240	14	
			5260 - 5320 - 5500 5600 - 5745 - 5825	16	
		MCS 9	5180 - 5240 - 5260 5320 - 5500 - 5600 5745 - 5825	13	
		VHT80	MCS 0~6	5180 - 5240	17
				5260 - 5320 - 5500	20
				5600 - 5745 - 5825	
			MCS 7	5180 - 5240	15
				5260 - 5320 - 5500	18
5600 - 5745 - 5825					
MCS 8	5180 - 5240	14			
	5260 - 5320 - 5500 5600 - 5745 - 5825	16			
MCS 9	5180 - 5240 - 5260 5320 - 5500 - 5600 5745 - 5825	13			
Sensitivity	IEEE 802.11b	11Mbps		-90	
	IEEE 802.11g	6Mbps		-94	
		54Mbps		-75	
	IEEE 802.11a	6Mbps		-94	
		54Mbps		-75	
	IEEE 802.11gn	HT20	MCS 0/8/16		-94
			MCS 7/15/23		-74
		HT40	MCS 0/8/16		-91
			MCS 7/15/23		-71
	IEEE 802.11an	HT20	MCS 0/8/16		-94
			MCS 7/15/23		-74
		HT40	MCS 0/8/16		-91
			MCS 7/15/23		-71
	IEEE 802.11ac	VHT20	MCS 0 1~3ss		-90
			MCS 6		-70(1~3ss)
			MCS 7 1~3ss		-66
			MCS 8 1~3ss		-64
		VHT40	MCS 0 1~3ss		-87
			MCS 7 1~3ss		-67
			MCS 8 1~3ss		-63
MCS 9			-61(1~3ss)		
VHT80		MCS 0 1~3ss		-84	
		MCS 7 1~3ss		-64	
		MCS 8 1~3ss		-60	
		MCS 9		-58(1~3ss)	

1. We just list the Target Power here, the exact EMI Conducted Power will be set in the CTL Table of the radio (base on EMC regulation), and the driver will limit the output power according to the CTL Table, therefore at times the actual output power will be lower than the target power. For detailed CTL Table Settings, please contact our support engineers.

3.2 Firmware Specification

Table 3.2 Firmware Specification

Features	Additional Information
Standard Compliance	<ul style="list-style-type: none"> - IEEE 802.3 and 802.3u 10Base-T and 100Base-TX physical layer specification - IEEE 802.11b/g specification compliance for wireless LAN - IEEE 802.1x security standard support - Power over Ethernet, IEEE 802.3at compliant
Operating Mode	<ul style="list-style-type: none"> - Thin AP mode - Fat AP mode
Thin AP	<ul style="list-style-type: none"> - FIT AP zero configuration - DHCP option43 - DHCP detection - Static IP detection - N backup
Multiple BSSID	<ul style="list-style-type: none"> - Supports up to 16 SSID Profile settings - Supports up to 4 Strict Priority Queues and configuration of certain SSIDs corresponding to Strict Priority Queue so as to distinguish link service priority - Limitation of client connections (# is configurable, default: unlimited) - Bandwidth control
Spanning Tree Protocol	802.1d support
DHCP Client	<ul style="list-style-type: none"> - Ability to act as a DHCP client to obtain IP address from DHCP server via LAN port. - In DHCP client mode, if DHCP server is not available, then use default IP address.
DHCP Server	<ul style="list-style-type: none"> - Allow DHCP servers to assign, or lease, IP addresses to computers and other devices that are enabled as DHCP clients.
VLAN	<ul style="list-style-type: none"> - Support per SSID VLAN tagging - Support system VLAN tagging
VPN Passthrough	<ul style="list-style-type: none"> - IPsec, PPTP and L2TP passthrough support - Support in AP and WDS modes, but not in client mode
Transmit Power Adjustment	<ul style="list-style-type: none"> - Manually adjustable <ul style="list-style-type: none"> • Transmit power adjustable unit should be 1 dBm • Transmit power adjustable range should be at least 8 dB
Device Remote Management	<ul style="list-style-type: none"> - Support remote management via SSH, FTP, WWW, and SNMP - Administrator can specify the following methods to allow for device management: <ul style="list-style-type: none"> • Interface (WLAN or Ethernet) • MAC address • IP address
System Monitoring	<ul style="list-style-type: none"> - System status

Management	<ul style="list-style-type: none"> - Embedded Web Configuration management - Command-line interface: SSH support - FTP/Web for firmware downloading, configuration, backup and restore - Built-in Diagnostic Tool - SNMP Management (v1, v2C, C3)
Security	<ul style="list-style-type: none"> - MAC address filtering through WLAN (support 128 account) - IEEE 802.1x security (EAP-TLS, EAP-TTLS, PEAP, EAP-SIM, -FAST, -AKA) - 64/128-bits WEP - Both WPA/WPA2 PSK & Enterprise support - Mixed WPA& WPA2 mode (support both WPA and WPA2 clients)
Quality of Service	WMM support
Diagnostics Capabilities	<ul style="list-style-type: none"> - The access point can perform self-diagnostic tests. These tests check the integrity of the following circuits: <ul style="list-style-type: none"> • FLASH memory • DRAM • Ethernet port • Wireless port - Sys log <ul style="list-style-type: none"> • Error log • Trace log • Packet Log
Association Management	- 5G Priority: In a dual-band AP, 5GHz band has a higher STA association priority than 2.4GHz band
	- 11n Priority: 802.11n standard gets a higher association priority than 802.11a/b/g standards
	- Support Air Time Fairness for clients compliant to different standards of 802.11a/b/g/n
	- Supports setting automatic disassociation with low-level MCS users
Integrated Spectrum Analyzer	<ul style="list-style-type: none"> - Detect and avoid interference by automatically selecting the best channel - Ability to detect WLAN and non-WLAN Device Interference
Newly-added MIB Nodes	<ul style="list-style-type: none"> - WlanStationTable <ul style="list-style-type: none"> • SNR (Signal-to-Noise Ratio) of associated STAs should be measured in dB • Physical layer transmit rate of STAs associated to AP • Packet Error Ratio of STAs associated to AP
	<ul style="list-style-type: none"> - WlanStatisticTable <ul style="list-style-type: none"> • Co-Channel Interference, CCI • Adjacent Channel Interference, ACI
	<ul style="list-style-type: none"> • WLAN Device Interference • Non-WLAN Device Interference
Smart Antenna	The Smart Antenna System consists of one printed and one stamped antenna connected to each Tx/Rx chain. It uses the S/W smart antenna algorithm to select the best possible combinations of stamped and printed antennas, giving the best performance.

3.3 Physical specification

Table 3.3 Physical Specification

Items	Description
Dimension	180 (L) mm x 180(D) mm x 94.5 (H) mm
Weight	1Kg
Housing type	Wall mount Ceiling mount

3.4 Environment Specification

Table 3.4 Environment Specification

Items	Description	Power Adapter Spec
Operating Temperature	0 to 55°C	0 ~ 40°C
Storage Temperature	-10 to 60°C	-10 ~ 75°C
Operating Humidity (non-condensing)	15 to 90% RH	10 to 90% RH
Storage Humidity (non-condensing)	15 to 90% RH	10 to 90% RH
Green	RoHS & Reach compliant	
Warranty	2 years	

3.5 Safety/Country Approval

Table 3.5 Safety/Country Approval

Items	Description
FCC	Part15 sub B Part15 sub C Part15 sub E
CE	EN301893 V1.7.1 EN300328 V1.8.1 EN301489 -1/-17 EN55022/24 EN60950-1