PRODUCT GUIDE
Indoor Access Points

RUCKUS an ARRIS company






FEATURE	C110	H320	H500	H510	R510	R610
DESCRIPTION	**802.11ac Wave2** dual-concurrent wall plate with built-in DOCSIS 3.0 cable modem	**802.11ac Wave 2** dual-concurrent wall switch with two 10/100MbE ports and BeamFlex+	**802.11ac Wave 1** dual-concurrent wall plate with five GbE ports and BeamFlex+	**802.11ac Wave 2** dual-concurrent wall switch with five GbE ports and BeamFlex+	**Mid-range** 802.11ac Wave 2 dual-concurrent AP with MU-MIMO and BeamFlex+	**Mid-range** 802.11ac Wave 2 dual-concurrent AP with MU-MIMO and BeamFlex+
Maximum PHY rate	867 Mbps (5GHz) 300 Mbps (2.4GHz)	867 Mbps (5GHz) 150 Mbps (2.4GHz)	867 Mbps (5GHz) 300 Mbps (2.4GHz)	867 Mbps (5GHz) 300 Mbps (2.4GHz)	867 Mbps (5GHz) 300 Mbps (2.4GHz)	1300 Mbps (5GHz) 600 Mbps (2.4GHz)
Wi-Fi technology	802.11ac (5GHz) 802.11n (2.4 GHz)	802.11ac (5GHz) 802.11n (2.4 GHz)	802.11ac (5GHz) 802.11n (2.4 GHz)	802.11ac (5GHz) 802.11n (2.4 GHz)	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)
Concurrent users	100	100	100	100	512	512
Radio chains:streams	2X2:2	5GHz: 2x2:2 MU MIMO 2.4GHz: 1x1:1 SU-MIMO	2x2:2	2x2:2	2x2:2	3x3:3
Antenna patterns (per band)	4	4	8	4	64	512
Antenna gain	3dBi for both 2.4 and 5GHz	2.4GHz: 0dBi 5GHz: 3dBi	3dBi for both 2.4 and 5GHz	2.4GHz: 0dBi 5GHz: 1dBi	2.4GHz: 1dBi 5GHz: 3 dBi	2.4GHz: 1dBi 5GHz: 3 dBi
PD-MRC	✓	✓	✓	✓	✓	✓
Rx sensitivity (2.4/5GHz)	-96/-95dBm	-99/-96dBm	-96/-95dBm	-99/-96dBm	-103dBm	-100dBm
ChannelFly	✓	✓	✓	✓	✓	✓
Smart meshing	✓	—	✓	✓	✓	✓
USB	✓	—	✓	✓	✓	✓
Ethernet ports	2 x 10/100MbE	2 x 10/100MbE 1 x 1GbE	5 x 10/100MbE	5 x 1GbE	2 x 1GbE	2 x 1GbE
WLAN Control and Management	• ZoneDirector • SmartZone	• ZoneDirector • SmartZone • Cloud Wi-Fi	• ZoneDirector • SmartZone	• ZoneDirector • SmartZone • Cloud Wi-Fi • Unleashed	• ZoneDirector • SmartZone • Cloud Wi-Fi • Unleashed	• ZoneDirector • SmartZone • Cloud Wi-Fi • Unleashed

PRODUCT GUIDE
Indoor Access Points






FEATURE	R710	R720	R310	R500	R600	M510
DESCRIPTION	**High-end** **802.11ac Wave 2 dual-concurrent AP with MU-MIMO and BeamFlex+**	**High-end** **802.11ac Wave 2 dual-concurrent AP with MU-MIMO, BeamFlex+ and 2.5Gbps backhaul**	**Entry level** **802.11ac Wave 1 dual-concurrent AP with BeamFlex**	**Mid-range** **802.11ac Wave 1 dual-concurrent AP wth BeamFlex+**	**Mid-range** **802.11ac Wave 1 dual-concurrent AP with BeamFlex+**	**Mobile Indoor** **802.11ac Wave 2 2x2:2 Wi-Fi AP with LTE Backhaul**
Maximum PHY rate	1733 Mbps (5GHz) 800 Mbps (2.4GHz)	1733 Mbps (5GHz) 800 Mbps (2.4GHz)	867 Mbps (5GHz) 300 Mbps (2.4GHz)	867 Mbps (5GHz) 300 Mbps (2.4GHz)	1300 Mbps (5GHz) 450 Mbps (2.4GHz)	867 Mbps (5GHz) 300 Mbps (2.4GHz)
Wi-Fi technology	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)
Concurrent users	512	512	100	512	512	512
Radio chains:streams	4x4:4 SU-MIMO 4x4:3 MU-MIMO	4x4:4 SU-MIMO & MU-MIMO	2x2:2	2x2:2	3x3:3	2x2:2 SU-MIMO 2x2:2 MU-MIMO
Antenna patterns (per band)	4,000+	4,000+	64	64	512	64
Antenna gain	3dBi for both 2.4 and 5GHz	3dBi for both 2.4 and 5GHz	2.4Ghz: 0 dBi 5Ghz: 3 dBi	4dBi for both 2.4 and 5GHz	3dBi for both 2.4 and 5GHz	2dBi for 2.4 and 3dBi for 5GHz
PD-MRC	✓	✓	—	✓	✓	✓
Rx sensitivity (2.4/5GHz)	-104dBm	-104dBm	-99dBm	-100/-95dBm	-100/-95dBm	-101/-95dBm
ChannelFly	✓	✓	✓	✓	✓	✓
Smart meshing	✓	✓	—	✓	✓	✓ (in future release)
USB	✓	✓	—	—	—	✓
Ethernet ports	2 x 1GbE	1 x 1GbE and 1 x 2.5GbE	1 x 1GbE	2 x 1GbE	2 x 1GbE	2 x 1GbE ports, RJ-45
WLAN Control and Management	• ZoneDirector • SmartZone • Cloud Wi-Fi • Unleashed	• ZoneDirector • SmartZone	• ZoneDirector • SmartZone • Cloud Wi-Fi • Unleashed	• ZoneDirector • SmartZone • Cloud Wi-Fi • Unleashed	• ZoneDirector • SmartZone • Cloud Wi-Fi • Unleashed	• SmartZone

PRODUCT GUIDE
Outdoor Access Points and Bridges








FEATURE	T300 Series	T301 Series	T310 Series	E510	T610 Series	T710 Series	T811-CM	P300
DESCRIPTION	Enterprise class 802.11ac AP with integrated omni or external antennas (5GHz)	Enterprise class 802.11ac AP with 120° or 30° directional integrated antennas	Entry-level 802.11ac Wave 2 outdoor AP series with integrated BeamFlex+ omni and sector antennas	Embedded 802.11ac Outdoor Wave 2 Wi-Fi AP with External BeamFlex+ Antennas	Mid-range 802.11ac Wave 2 dual concurrent AP with BeamFlex+	High-end 802.11ac Wave 2 dual concurrent AP with BeamFlex+	Outdoor 4x4:4 2.4/5GHz 802.11ac Wave 2 Wi-Fi access point with DOCSIS 3.1 backhaul	Point-to-Point / Multi-point bridge
Maximum PHY rate	867 Mbps (5GHz) 300 Mbps (2.4GHz)	867 Mbps (5GHz) 300 Mbps (2.4GHz)	867 Mbps (5GHz) 300 Mbps (2.4GHz)	867 Mbps (5GHz) 300 Mbps (2.4GHz)	1733 Mbps (5GHz) 800 Mbps (2.4GHz)	1733 Mbps (5GHz) 800 Mbps (2.4GHz)	1733 Mbps (5GHz) 800 Mbps (2.4GHz)	867 Mbps (5GHz)
Wi-Fi technology	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz) 802.11n (2.4GHz)	802.11ac (5GHz)
Concurrent users	512	512	512	512	512	512	512	—
Radio chains:streams	2x2:2	2x2:2	2x2:2	2x2:2	4x4:4	4x4:4	4x4:4	2x2:2
Antenna patterns (per band)	64	8	64	64	4,000+	4,000+	4,000+	—
Antenna gain	3dBi for both 2.4 and 5GHz	**Omni** - 2.4GHz: 3dBi; 5GHz: 3dBi **120 Sector** - 2.4GHz: 6dBi, 5GHz: 8dBi **30 Sector** - 2.4GHz: 9dBi, 5GHz: 15dBi	**Omni** - 2.4GHz: 2dBi, 5GHz: 3dBi **120 Sector** - 2.4GHz: 6dBi, 5GHz: 9dBi **30 Sector** - 2.4GHz: 9dBi, 5GHz: 12dBi	2dBi for both 2.4GHz and 3dBi for 5GHz	**Omni** - 2.4GHz: 3dBi; 5GHz: 3dBi **120 Sector**: 2.4GHz: 6dBi, 5GHz: 8dBi	**Omni** - 3dBi for both 2.4 and 5GHz **Sector** - 6dBi for 2.4GHz and 8dBi for 5GHz	3dBi for both 2.4 and 5GHz	—
PD-MRC	✓	✓	✓	✓	✓	✓	✓	✓
Rx sensitivity (2.4/5GHz)	-100/-95dBm	-100/-94dBm	-101dBm	-101dBm	-104dBm	-104/-104dBm	-98/-97	-96dBm
ChannelFly	✓	✓	✓	✓	✓	✓	✓	✓
Smart meshing	✓	✓	✓	✓	✓	✓	✓	—
Ethernet interface	1 x 1GbE	1 x 1GbE	1 x 1GbE	1 x 1GbE	2 x 1GbE	2 x 1GbE	1 x 1GbE	1 x 1GbES
USB	—	—	Models d, s, & n	✓	—	—	✓	—
Fiber interface	—	—	—	—	—	✓	✓	—
WLAN Control and Management	• ZoneDirector • SmartZone • Cloud Wi-Fi • Unleashed	• ZoneDirector • SmartZone • Cloud Wi-Fi • Unleashed	• ZoneDirector • SmartZone	• SmartZone • ZoneDirector • Standalone	• ZoneDirector • SmartZone • Cloud Wi-Fi	• ZoneDirector • SmartZone • Cloud Wi-Fi • Unleashed	• ZoneDirector	• ZoneDirector • SmartZone

	Appliance Controller			Controller-Less	Cloud
					
FEATURE	**ZoneDirector 1200**	**SmartZone 100**	**SmartZone 300**	**Unleashed**	**Cloud Wi-Fi**
Number of APs supported	Up to 150	Up to 1,024 / 3,000 cluster	Up to 10,000 / 30,000 cluster	Up to 25	Virtually unlimited number of APs supported
Number of switches supported	—	Up to 50 / 150 cluster	Up to 500 / 1,500 cluster	—	—
Clients	Up to 4,000	Up to 25,000 / 60,000 cluster	Up to 100,000 / 450,000 per cluster	up to 512	Clients per AP: refer to AP data sheet
Ethernet ports	2 Ethernet ports, auto MDX, autosensing 1GbE	1GE Model: 4 GbE ports	6 x 1GbE ports 4 x 10GbE ports	Refer to selected AP data sheet	N/A
Authentication support	802.1X, Local database, Active Directory, RADIUS, LDAP	802.1X, MAC address	802.1x, Local database, Active Directory, RADIUS, LDAP	802/1x. local database, Active Directory, RADIUS, LDAPr	PSK, 802.1x, Active Directory, RADIUS, LDAP, SMS, social login, open
Guest networking/captive portal	✓	✓	✓	✓	✓
DHCP server	✓	External or Assigned	External or Assigned	✓	External or assigned
AP discovery and control	L2 / L3	L2 / L3	L2 / L3	L2	L2
SSID/WLAN support	256	2,048 / 2,048 cluster	6,144 per SZ-300	16	15/Venue
Management Interface	Web GUI, FlexMaster	Web GUI, CLI	Web GUI, CLI	Web GUI, CLI	Web GUI
Remote Management	No	Yes	Yes	Yes	Yes
Management protocol(s)	SNMP v3	SNMP v3, RESTful JSON	SNMP v3, RESTful JSON	SNMP v3	N/A
VLAN support	Dynamic VLANs	Dynamic VLANs	Dynamic VLANs	Yes	Dynamic VLANs
Data Plane	Tunneling or local breakout	Tunneling or local breakout	Tunneling or local breakout	Local breakout	Local breakout
Power supply	DC or AC	DC or AC	DC or AC	PoE	APs powered using PoE or optional power supply
Fans	—	Redundant	Six redundant, field swappable fans in three sets	N/A	N/A
SKU/Partnumber	901-1205-XX00	1GE: P01-S104-XX00 10GE: P01-S124-XX00 AP Lic: L09-0001-SG00	901-S300-WW10/00	Refer to Unleashed data sheet for supported APs	Refer to Cloud Wi-Fi data sheet for supported APs

Virtual Controller

FEATURE	Virtual SmartZone-E	Virtual SmartZone-H
Number of APs supported	1,024, 3K w/cluster	10K, 30K w/cluster
Number of switches supported	Up to 50 / 150 cluster	Up to 500 / 1,500 cluster
Clients	25K / 60K per cluster	100K / 300K per cluster
Ethernet ports	1 vNIC	1 or 3 vNIC
Authentication support	802.1x, Local database, Active Directory, RADIUS, LDAP	802.1x, Local database, Active Directory, RADIUS, LDAP
Guest networking/captive portal	✓	✓
DHCP server	External or vSZ-D assigned	External or vSZ-D assigned
AP discovery and control	L2 / L3	L2 / L3
SSID/WLAN support	2,048	6,000
Management Interface	Web GUI, SCI	Web GUI, SCI
Remote Management	Yes	Yes
Management protocol(s)	SNMP v3	SNMP v3
VLAN support	Dynamic VLANs	Dynamic VLANs
Deployment	Tunneling or local breakout	Tunneling or local breakout
Power supply	N/A	N/A
Fans	N/A	N/A
SKU/Partnumber	L09-VSCG-WW00	L09-VSCG-WW00

SmartZone

FEATURE	vSZ-D
Secured data plane tunneling	Enables forwarding of user data traffic through secure tunnels on Ruckus APs when managed by Virtual SmartZone controllers.
Multiple hypervisor support	Supports the most widely deployed VMware and KVM hypervisors
NFV flexible architecture	Complete separation of Control+Management plane (vSZ) and data plane functions (vSZ-D) via separate VMs that support distributed and centralized deployments providing compelling architecture flexibility
Works seamlessly with virtual Smart Zone	vSZ acts as the controller VM for Ruckus APs as well as vSZ-D (Virtual Data plane) instances providing seamless configuration and management capabilities.
Up to 10 vSZ-D per vSZ and Up to 40 vsZ-D per cluster	The vSZ controller runs in Active/Active (3+1) mode for extremely high availability. Each vSZ-D runs as an independent virtual machine instance that is managed by the vSZ controller.
vSZ Zone affinity for vSZ-DA	This feature enables Ruckus APs in a particular zone establish tunnels with the vSZ-D in that particular zone. Provides flexibility for distributed and managed services deployments where the vSZ-Ds can be co-located on-premise with Ruckus APs (vSZ Zones) on medium/large high density sites that need tunneling. With upto 40 vSZ-Ds per cluster, the SZ 3.5 release can potentially support a large number of such distributed deployments.
DHCP server and NAT	This feature enables a high scale DHCP Server on the vSZ-D. The DHCP Server is a high-scale server specifically designed and architected for Wi-Fi deployments that provide near-real time IP address assignment combined with NAT this provides tremendous value to the operator since it avoids mac-address scaling limits and high costs on the network infrastructure (switches).
Legal Intercept	This feature is useful from a Legal Intercept requirements perspective and enables the ability to mirror packets in both uplink and downlink directions for Wi-Fi clients that have a CALEA warrant.
Support for northbound tunnels L2oGRE	This feature enables vSZ-D to forward WiFi client traffic to a specified 3rd party WAG (Wireless Access Gateway) over L2oGRE protocol standard.
IPv6 support	Supports IPv6 addressing for the vSZ-D interfaces as well as support forwarding of IPv6 client traffic
L3 Roaming (inter vSZ-D tunnels)	This feature enables L3 Roaming when traffic is tunneled to the vSZ-D. The feature relies on inter vSZ-D flexi-vpn tunnels that are dynamically created with minimal user intervention. L3 Roaming can be enabled based on VLANs or subnets.

	Access				Access / Aggregation		Aggregation / Core
FEATURE	**ICX 7150-Compact**	**ICX 7150**	**ICX 7150 Z-Series**	**ICX 7250**	**ICX 7450**	**ICX 7650**	**ICX 7750**
Switch Model							
Switching Capacity (max)	68Gbps	180Gps	304Gbps	256Gbps	336Gbps	1.128 Tbps	2.56Tbps
1GbE RJ-45 ports	12 +2	24 or 48 +2	48	24 or 48	24 or 48	48	48
1GbE SFP ports	2	4	8	8	48	48	48
1/2.5GbE RF-45 ports			16				
1/2.5/5/10GbE RF-45 ports						24	
10GbE SFP+ ports (max)	2	4	8	8	12	24+4	96[1]
10GbE RJ-45 ports (max)					12	24	48
40GbE QSFP+ ports (max)					3	2	32
100GbE QSFP28 ports (max)						2	
PoE Power Budget (max)	124W	740W	1480W	1480W	1480W	1500W	
Switches per stack (max)	12	12	12	12	12	12	12
Aggregate stack bandwidth	240Gbps	480Gbps	480Gbps	480Gbps	960Gbps	2.4 Tbps	5.76Tbps

[1] Requires QSFP+ splitter cables

	Access				Access / Aggregation		Aggregation / Core
FEATURE	**ICX 7150-Compact**	**ICX 7150**	**ICX 7150 Z-Series**	**ICX 7250**	**ICX 7450**	**ICX 7650**	**ICX 7750**
Switch Model							
PoE/PoE+	✓	✓	✓	✓	✓	✓	
Long-Distance Stacking	✓	✓	✓	✓	✓	✓	✓
sFlow	✓	✓	✓	✓	✓	✓	✓
Layer 3 (STATIC, RIP, OSPF)	✓	✓	✓	✓	✓	✓	✓
OpenFlow with Hybrid Port Mode	✓	✓	✓	✓	✓	✓	✓
Ruckus Campus Fabric	✓	✓	✓	✓	✓	✓	✓
Redundant Power Option			✓	✓	✓	✓	✓
Hot Swap Internal power supplies and fans			✓		✓	✓	✓
EEE (Energy Efficient Ethernet)				✓	✓	✓	
VRF				✓	✓	✓	✓
IPsec VPN (with service module)					✓		
MACsec					✓	✓	
BGP					✓	✓	✓
PoH (90W PoE power per port)					✓	✓	
Reversible airflow option					✓	✓	✓
VxLAN							✓
Multi Chassis Trunking (MCT)							✓

PRODUCT GUIDE

Software, Analytics and Location Solutions

SOFTWARE		
Smart Positioning Technology SPoT (location engine and analytics software)		The Ruckus real-time location engine and analytics software enables retailers, stadiums, and transportation hubs to enhance the way they interact with customers based on precise location. Deployed on top of Ruckus Smart Wi-Fi, the Ruckus SPoT does not require any additional hardware and has unlimited scalability in the cloud. Send real-time travel updates, targeted promotions, and even classroom notes through footfall traffic and proximity analytics to enrich customer relationships.
Cloudpath (Security and Management software)		Cloudpath is a security and policy management platform that enables any IT organization to protect the network by easily and definitively securing users and their wired and wireless devices—while freeing those users and IT itself from the tyranny of passwords. Available cloud-managed or as a virtual instance and priced per user.
SmartCell Insight (SCI) Network reporting and predictive analytics software		SmartCell Insight (SCI) lets you keep on top of a wide range of Key Performance Indicators (KPIs) associated with tens or hundreds of terabytes of data traffic that cross your network every day. Designed with large-scale service provider and enterprise networks in mind, SCI enables IT to extract insight from the network. That insight leads to better informed business and operational decisions.

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