Embedded WLAN AP for CSG Series

Versa CSG Series appliances can be optionally equipped with an embedded enterprise-grade WLAN access point (WLAN AP) module to provide concurrent, dual-band, 802.11ac Wave 2 capability. The embedded WLAN AP module adds enterprise-grade WLAN capability to the routing, SD-WAN, and next-generation security capabilities of the CSG series appliances. It provides WLAN connectivity simultaneously at 2.4 GHz and 5 GHz, thus supporting a variety of devices with an aggregate throughput of up to 1 Gbps. The controllerless WLAN AP module embedded with CSG Series appliance is centrally managed and controlled by Versa Director; network and device analytics are provided by Versa Analytics.

Versa WiFi Advantage

The embedded WLAN AP is based on the industry-leading and industry-proven WLAN technology used in many commercially available enterprise-grade products today. Here are some of the key highlights:

Dual-Band Dual-Concurrent (DBDC)

The embedded WLAN AP can operate simultaneously at 2.4 GHz and 5 GHz. The 5-GHz radio provides the high performance required for bandwidth-hungry applications. The 2.4-GHz radio, with its longer range, is required for connecting legacy devices, IOT devices, and other low-end devices. Versa supports client steering and band steering to encourage dual-band client devices, such as most modern smartphones, tablets, laptops, and PCs, to use the less-congested and higher-capacity 5-GHz band.

Multi-User MIMO

With 802.11ac Wave 2 and 2x2:2 MU-MIMO, the embedded WLAN AP can connect simultaneously to multiple clients efficiently. The reduced time-sharing increases the performance of the embedded WLAN AP tremendously, which results in improved user experience.

Smart WiFi

The embedded WLAN AP automatically selects the best channels for the best user experience. Administrators can manually configure the channel assignments from the Versa Director using the workflow and template configuration capabilities provided. The embedded WLAN AP supports Dynamic Frequency Selection (DFS), which allows the use of additional frequency bands that may be less utilized. The embedded WLAN AP leverages previously reserved channels to tap into the wider frequency spectrum. In addition, the embedded WLAN AP supports Maximum Ratio Combining (MRC) capabilities for best receive sensitivity combined with high transmit power. The embedded WLAN AP is capable of supporting native mesh network capability in the future.

Performance and Scaling

This embedded WLAN AP supports 802.11a/b/g/n/ac Wave 2, 20/40/80-MHz bands in the downlink direction, and 5/10/20-MHz bands in the uplink direction, as well as user-configurable channel bonding. Up to 512 clients can simultaneously connect to the embedded WLAN AP across dual frequencies. To further

improve the user experience, it also supports background screening, autoselection of best (clean) channels, and the DFS channel to tap into a wider frequency spectrum. The optional built-in Qos features of the embedded WLAN AP complement the Versa FlexVNF's elaborate QoS handling to prioritize and manage QoS over the air.

Security

This embedded WLAN AP supports state-of-the-art WLAN security. WLAN security is provided by 802.11i, AES-CCMP, TKIP, WAPI, WEP, WPA, WPA2, and WPA2 enterprise-based encryption methods.

Management

Versa Director is used to configure, manage, and control the embedded WLAN AP. The built-in spectrum analyzer can be used to identify rogue frequencies and eliminate roque devices.

WLAN Tx Specifications

				Conductive TX Power (dBm)					Conductive TX EVM (db)
				2.4 Ghz		5 GHz			
Protocol	Data Rate (MBps)	Modulation	Coding Rate	20 MHZ	40 MHz	20 MHz	40 MHz	80 MHz	
802.11b	1			17 +/ 2dB	N/A	N/A			-10
	2			17 +/ 2dB					-10
	5.5			17 +/ 2dB					-10
	11			17 +/ 2dB					-10
802.11a/g	6	BPSK	1/2	17 +/ 2dB	N/A	18 +/ 2dB	N/A		-5
	9	BPSK	3/4	17 +/ 2dB		18 +/ 2dB			-8
	12	QPSK	1/2	17 +/ 2dB		18 +/ 2dB			-10
	18	QPSK	3/4	17 +/ 2dB		18 +/ 2dB			-13
	24	16-QAM	1/2	17 +/ 2dB		18 +/ 2dB			-16
	36	16-QAM	3/4	17 +/ 2dB		17 +/ 2dB			-19
	48	64-QAM	2/3	16 +/ 2dB		16 +/ 2dB			-22
	54	64-QAM	3/4	15 +/ 2dB		15 +/ 2dB			-25
802.11n/ac	MCS0	BPSK	1/2	17 +/ 2dB	17 +/ 2dB	18 +/ 2dB	18 +/ 2dB	18 +/ 2dB	-5
	MCS1	QPSK	1/2	17 +/ 2dB	17 +/ 2dB	18 +/ 2dB	18 +/ 2dB	18 +/ 2dB	-10
	MCS2	QPSK	3/4	17 +/ 2dB	17 +/ 2dB	18 +/ 2dB	18 +/ 2dB	18 +/ 2dB	-13
	MCS3	16-QAM	1/2	17 +/ 2dB	17 +/ 2dB	18 +/ 2dB	18 +/ 2dB	18 +/ 2dB	-16
	MCS4	16-QAM	3/4	17 +/ 2dB	17 +/ 2dB	17 +/ 2dB	17 +/ 2dB	17 +/ 2dB	-19
	MCS5	64-QAM	2/3	16 +/ 2dB	16 +/ 2dB	16 +/ 2dB	16 +/ 2dB	16 +/ 2dB	-22
	MCS6	64-QAM	3/4	15 +/ 2dB	15 +/ 2dB	15 +/ 2dB	15 +/ 2dB	15 +/ 2dB	-25
	MCS7	64-QAM	5/6	14 +/ 2dB	14 +/ 2dB	15 +/ 2dB	15 +/ 2dB	15 +/ 2dB	-27
	MCS8	256-QAM	3/4	N/A	N/A	14 +/ 2dB	14 +/ 2dB	14 +/ 2dB	-30
	MCS9	256-QAM	5/6	N/A	N/A	N/A	14 +/ 2dB	14 +/ 2dB	-32

WLAN Rx Specifications

				Conductive		
				Minimum RX Sensitivity (dBm)		
Protocol	Data Rate (MBps)	Modulation	Coding Rate	20 MHZ	40 MHz	80 MHz
802.11b	1			-95	N/A	
	2			-93		
	5.5			-92		
	11			-89		
802.11a/g	6	BPSK	1/2	-89	N/A	
	9	BPSK	3/4	-88		
	12	QPSK	1/2	-87		
	18	QPSK	3/4	-85		
	24	16-QAM	1/2	-82		
	36	16-QAM	3/4	-79		
	48	64-QAM	2/3	-74		
	54	64-QAM	3/4	-73		
802.11n/ac	MCS0	BPSK	1/2	-89	-86	-83
	MCS1	QPSK	1/2	-85	-82	-79
	MCS2	QPSK	3/4	-83	-80	-77
	MCS3	16-QAM	1/2	-79	-76	-73
	MCS4	16-QAM	3/4	-76	-73	-70
	MCS5	64-QAM	2/3	-72	-69	-66
	MCS6	64-QAM	3/4	-71	-68	-65
	MCS7	64-QAM	5/6	-70	-67	-64
	MCS8	256-QAM	3/4	-67	-64	-62
	MCS9	256-QAM	5/6	N/A	-61	-58

Specifications

Hardware Type	Indoor Access Point
Radio	
Number of Radios	2
Radio Capabilities	Radio 1: 2.4 GHz 802.11b/g/n (2x2:2 streams) 20/40 MHz (64 QAM) Radio 2: 5 GHz 802.11 a/n/ac (2x2:2 streams) 20/40/80 MHz (256 QAM)
Maximum Data Rate**	Radio 1: Up to 300 Mbps Radio 2: Up to 867 Mbps
Supported Frequency Bands*	2.412–2.462 5.180–5240 5.260 –5.320 5.500–5.700 5.745– 5.825
Max Tx Power	20 dBm for 2.4 GHz 21 dBm for 5 GHz
Per-Radio Client Support	256 client per Radio (Max 512 over both Radios)

Antenna	
Number of Antennas	2
Antenna Type/Peak Gain	External: Peak gain of 3.1 dBi at 2.4 GHz and 4.39 dBi at 5 GHz
802.11 Capabilities	
802.11	802.11a/b/n/ac wave2
EAP Types	EAP-TLS, EAP-TTLS/MSCHAPv2, EAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC EAP-SIM, EAP-AKA, EAP-FAST
Authentication	WPA and WPA2 with 802.11x or preshared Key, WEP, captive portal, MAC blacklist/ whitelist
SSID Type	Local bridge
802.11 Features	
802.11ac MU-MIMO Wave 2	Yes
Transmit Beam Forming (TxBF)	Yes
Low-Density Parity Check (LDPC) Encoding	Yes
Maximum Likelihood Demodulation (MLD)	Yes
Maximum Ratio Combining (MRC)	Yes
A-MPDU and A-MSDU Packet Aggregation	Yes
MIMO Power Save	Yes
Short Guard Interval	Yes
Certifications	
DFS	FCC, CE, CB (IEC), Japan
Form Factor	Internal Module

* Country-specific restrictions apply.

** The maximum observable bandwidth over WAN and LAN links may be lower.

Ordering Information

Versa WLAN Access Point module adds enterprise WLAN AP capability to CSG Series appliances. WLAN AP module is available as an option when ordering a CSG series appliance. For further details, refer to the CSG series ordering guide.

Learn more at http://www.versa-networks.com and follow us on Twitter @versanetworks.

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