

# SAMSUNG WEA512i

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## Overview

The Samsung WEA512i is an 802.11ac Wave2 indoor access point (AP) that delivers one of the industry's best price/performance ratios to enterprises. With dual concurrent radio, 2x multi-user MIMO, and Dynamic Frequency Selection (DFS) capabilities, the WEA512i AP enables high-performance wireless connectivity and high throughput, with data rates of up to 866 Mbps.

The integrated 2x2 MIMO helps to optimize data transfer concurrently at higher speeds, thereby providing greater reliability and higher performance in highly demanding environments. As per the latest report by the Tolly Group, the Samsung WEA512i provides the best overall Quality of Experience (QoE) and performance.<sup>1</sup>

## Simplified Management

WEA512i access points can either be managed via a Command Line Interface (CLI) or centrally managed via a Web interface by using high-performance controllers that are optimally designed to support both small and mid-scale enterprise deployment (WEC 8050) as well as large-scale deployments (WEC 8500).

In addition, the complementary Samsung Wireless Enterprise Manager (WEM) provides operational convenience by enabling system administrators to monitor failure situations anywhere, at any time, and to quickly resolve them.

## Key Features

- **High Resiliency Under Load** - The traffic management capabilities of the WEA512i exceed its normal throughput capacity, when presented with multiple voice (VoIP), video, and data streams. The WEA512i delivers the highest throughput of any single frame size, reaching 710Mbps at 1,518-byte frames, which is the largest frame size supported by standard Ethernet<sup>2</sup>
- **Seamless Roaming without Packet Loss** - Samsung WEA512i AP ensures seamless roaming without packet loss – an essential characteristic for enterprises today to provide a rich and reliable mobile IP communication experience to improve employee productivity
- **Easy to Install** - Compact, easy to install, and a visually appealing design – the Samsung WEA512i's light weight, aesthetic design and dimensions make it a user-friendly device for installation
- **Highest Client Association for High Density Environment** - A single WEA512i AP can connect to and communicate with 244 clients simultaneously – nearly twice as much as other solutions in the market – providing the best return on investment for high-density environments



<sup>1</sup> Test Report, Tolly Group; April 2018

<sup>2</sup> Ibid.

# WEA512i

## Key Enabling Technologies



### Intelligent Beam Selectable Antenna (IBSA)<sup>TM</sup>

Expands service coverage and increases receiving sensitivity to ensure higher performance



### Airequalizer

Guarantees airtime fairness to every device in crowded environments



### Self-Organizing Network (SON)

Self-optimizes Wi-Fi connectivity and cell configurations to adapt to network conditions and manage overburdened networks



### Voice Aware Traffic Scheduling (VaTS)<sup>3</sup>

Ensures optimized routing and QoS of real-time communication traffic as well as crystal-clear real-time voice collaboration over Wi-Fi



<sup>3</sup> Available only with access point deployments with controllers

# WEA512i

## Key Specifications



Item	Spec																																																																																																																																																																																																																																
Radio Specifications	<ul style="list-style-type: none"> <li>• 802.11a/b/g/n/ac</li> <li>• Dual concurrent radio</li> <li>• 2 × 2 MIMO, 2 spatial streams, 2 Multiuser MIMO</li> <li>• PHY data rates up to 866 Mbps (5 GHz)</li> <li>• 802.11n high throughput (HT20/40)</li> <li>• 802.11ac very high throughput (VHT20/40/80)</li> <li>• Dynamic frequency selection (DFS)</li> </ul>																																																																																																																																																																																																																																
Operation Mode	<ul style="list-style-type: none"> <li>• Controller-based Mode</li> <li>• Standalone Mode (requires a separate software)</li> </ul>																																																																																																																																																																																																																																
Supported Wireless LAN Controller	WEC8500 Series / WEC8050 Series																																																																																																																																																																																																																																
Data Rates	<ul style="list-style-type: none"> <li>• 802.11a: 6, 9, 12, 18, 24, 36, 48 and 54 Mbps</li> <li>• 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps</li> <li>• 802.11n: MCS 0 to MCS 15 (6.5 Mbps to 300 Mbps)</li> <li>• 802.11ac: MCS 0 to MCS 9 (6.5 Mbps to 866 Mbps)</li> </ul>																																																																																																																																																																																																																																
Frequency	<ul style="list-style-type: none"> <li>• 802.11b/g/n: 2.412 GHz to 2.472 GHz 13 CH</li> <li>• 802.11a/n/ac: 5.180 GHz to 5.825 GHz 25 CH</li> <li>* Available Channels are compliant with local regulations</li> </ul>																																																																																																																																																																																																																																
Maximum Transit Power	<ul style="list-style-type: none"> <li>• 22 dBm with 2 streams (19 dBm/Path)</li> <li>*The maximum transmission power will vary by channel and according to individual regulations</li> </ul>																																																																																																																																																																																																																																
Receive Sensitivity	<table border="1"> <thead> <tr> <th>Rate</th> <th colspan="3">2G</th> <th colspan="3">5G</th> </tr> <tr> <th></th> <th>HT20</th> <th>HT20</th> <th>HT40</th> <th>VHT20</th> <th>VHT40</th> <th>VHT80</th> </tr> </thead> <tbody> <tr><td>MCS 0</td><td>-94</td><td>-93</td><td>-90</td><td></td><td></td><td></td></tr> <tr><td>MCS 7</td><td>-75</td><td>-73</td><td>-71</td><td></td><td></td><td></td></tr> <tr><td>MCS 8</td><td>-92</td><td>-91</td><td>-88</td><td></td><td></td><td></td></tr> <tr><td>MCS 15</td><td>-72</td><td>-71</td><td>-68</td><td></td><td></td><td></td></tr> <tr><td>MCS 16</td><td>-90</td><td>-89</td><td>-85</td><td></td><td></td><td></td></tr> <tr><td>MCS 23</td><td>-70</td><td>-69</td><td>-65</td><td></td><td></td><td></td></tr> <tr><td>MCS 24</td><td>-87</td><td>-87</td><td>-83</td><td></td><td></td><td></td></tr> <tr><td>MCS 31</td><td>-68</td><td>-68</td><td>-65</td><td></td><td></td><td></td></tr> <tr><td>MCS0/NSS1</td><td></td><td></td><td></td><td>-93</td><td>-90</td><td>-87</td></tr> <tr><td>MCS7/NSS1</td><td></td><td></td><td></td><td>-73</td><td>-71</td><td>-69</td></tr> <tr><td>MCS8/NSS1</td><td></td><td></td><td></td><td>-69</td><td>-67</td><td>-65</td></tr> <tr><td>MCS9/NSS1</td><td></td><td></td><td></td><td>N/A</td><td>-65</td><td>-63</td></tr> <tr><td>MCS0/NSS2</td><td></td><td></td><td></td><td>-91</td><td>-88</td><td>-85</td></tr> <tr><td>MCS7/NSS2</td><td></td><td></td><td></td><td>-71</td><td>-68</td><td>-67</td></tr> <tr><td>MCS8/NSS2</td><td></td><td></td><td></td><td>-67</td><td>-66</td><td>-64</td></tr> <tr><td>MCS9/NSS2</td><td></td><td></td><td></td><td>N/A</td><td>-63</td><td>-60</td></tr> <tr><td>MCS0/NSS3</td><td></td><td></td><td></td><td>-89</td><td>-85</td><td>-82</td></tr> <tr><td>MCS7/NSS3</td><td></td><td></td><td></td><td>-69</td><td>-65</td><td>-65</td></tr> <tr><td>MCS8/NSS3</td><td></td><td></td><td></td><td>-65</td><td>-63</td><td>-61</td></tr> <tr><td>MCS9/NSS3</td><td></td><td></td><td></td><td>-63</td><td>-61</td><td>-58</td></tr> <tr><td>MCS0/NSS4</td><td></td><td></td><td></td><td>-87</td><td>-83</td><td>-80</td></tr> <tr><td>MCS7/NSS4</td><td></td><td></td><td></td><td>-68</td><td>-65</td><td>-62</td></tr> <tr><td>MCS8/NSS4</td><td></td><td></td><td></td><td>-64</td><td>-61</td><td>-58</td></tr> <tr><td>MCS9/NSS4</td><td></td><td></td><td></td><td>-62</td><td>-59</td><td>-56</td></tr> <tr><td colspan="7">802.11 b</td></tr> <tr><td>1 Mbps</td><td>-99</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>11 Mbps</td><td>-90</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td colspan="7">802.11 a/g</td></tr> <tr><td>6 Mbps</td><td>-95</td><td>-94</td><td></td><td></td><td></td><td></td></tr> <tr><td>54 Mbps</td><td>-77</td><td>-76</td><td></td><td></td><td></td><td></td></tr> </tbody> </table>	Rate	2G			5G				HT20	HT20	HT40	VHT20	VHT40	VHT80	MCS 0	-94	-93	-90				MCS 7	-75	-73	-71				MCS 8	-92	-91	-88				MCS 15	-72	-71	-68				MCS 16	-90	-89	-85				MCS 23	-70	-69	-65				MCS 24	-87	-87	-83				MCS 31	-68	-68	-65				MCS0/NSS1				-93	-90	-87	MCS7/NSS1				-73	-71	-69	MCS8/NSS1				-69	-67	-65	MCS9/NSS1				N/A	-65	-63	MCS0/NSS2				-91	-88	-85	MCS7/NSS2				-71	-68	-67	MCS8/NSS2				-67	-66	-64	MCS9/NSS2				N/A	-63	-60	MCS0/NSS3				-89	-85	-82	MCS7/NSS3				-69	-65	-65	MCS8/NSS3				-65	-63	-61	MCS9/NSS3				-63	-61	-58	MCS0/NSS4				-87	-83	-80	MCS7/NSS4				-68	-65	-62	MCS8/NSS4				-64	-61	-58	MCS9/NSS4				-62	-59	-56	802.11 b							1 Mbps	-99						11 Mbps	-90						802.11 a/g							6 Mbps	-95	-94					54 Mbps	-77	-76				
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Integrated Antenna	2.4 GHz: 3.5 dBi; 5 GHz: 6.0 dBi																																																																																																																																																																																																																																
Interfaces	<ul style="list-style-type: none"> <li>• One 10/100/1000BASE-T Ethernet port (PoE)</li> <li>• One Management console port</li> </ul>																																																																																																																																																																																																																																

# WEA512i

## Key Specifications



Dimensions	Diameter X Height: 167.3 mm x 34.1 mm (excluding protrusions)
Weight	0.59 lbs (+5%)
Environmental	Storage temp: -13 to 158°F; Operating temp: 32 to 113°F; Operating Humidity: 0 to 90% (non-condensing)
Input Power Requirements	IEEE 802.3af PoE: 50 to 57 VDC
Powering Options	Local power supply: 48 V / 0.27 A
Power Draw	Under 10 W
Compliance Standards	<ul style="list-style-type: none"><li>• Safety : KN 301 489-1/KN 301 489-17 (Korea)</li><li>• Radio approvals : KN 301 489-1/KN 301 489-17 (Korea)</li><li>• Wi-Fi Alliance Certified : Wi-Fi CERTIFIED™ a, b, g, n, ac WPA™ – Enterprise, Personal WPA2™ – Enterprise, Personal EAP Type(s) EAP-TLS EAP-TTLS/MSCHAPv2 PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC EAP-SIM EAP-AKA EAP-AKA Prime EAP-FAST Protected Management Frames WMM® WMM®-Power Save Wi-Fi CERTIFIED™ ac 2 Spatial Streams 5 GHz Rx MCS 8-9 (256-QAM) Tx STBC 2x1 Rx A-MPDU of A-MSDU Tx SU beamformer Low Density Parity Check coding Tx DL MU-MIMO RTS with BW Signaling</li><li>• EN 60950-1 (US)</li></ul>
Security	<ul style="list-style-type: none"><li>• Secure boot &amp; data store with Embedded Secure Element</li><li>• IEEE 802.11i, WPA™/ WPA2™ – Enterprise/Personal, TKIP, AES</li><li>• 802.1x/EAP based Controller internal / external Radius, LDAP, Active Directory</li><li>• CAPWAP</li><li>• EN 60950-1 (US)</li></ul>
Part Number	WDS-A512i/XAR

# WEA512i Integrated Antenna

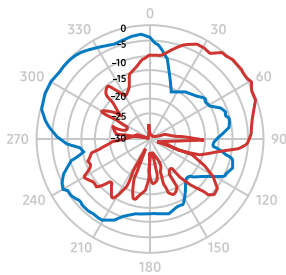
## Key Specifications



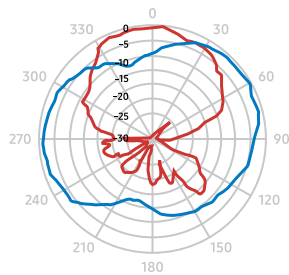
Item	Spec
Frequencies [MHz]	2,400-2,495/4,900-5,925
Configuration	2 of 2.4GHz, 2 of 5GHz
Gain [dBi]	3.5 @2.4GHz/ 6 @5GHz
VSWR (max)	2 @2.4GHz/ 2 @5GHz
Polarization	Linear
Mounting	Integrated

## Radiation Patterns

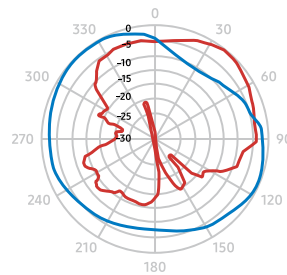
■ Azimuth  
■ Elevation



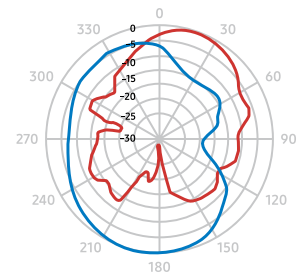
WEA512i  
Service A1 | 5GHz



WEA512i  
Service A2 | 5GHz



WEA512i  
Service A3 | 2.4GHz



WEA512i  
Service A4 | 2.4GHz