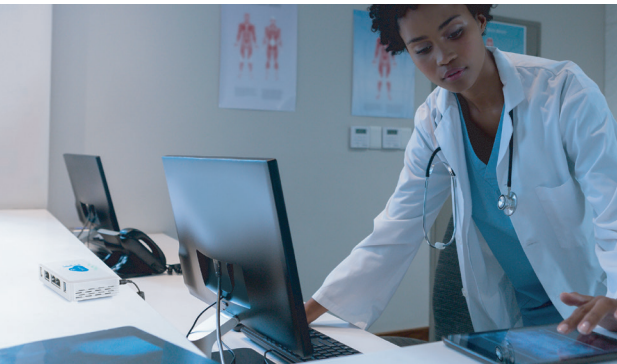# SAPPHIRE EYE® 250

ENHANCING END-USER CONNECTIONS THROUGH RAPID DEPLOYMENT

Sapphire Eye® 250 from 7SIGNAL® is a patented, portable, over-the-air (OTA) Wi-Fi sensor and software client designed to enhance wireless connections and improve the digital experience of end users and devices. Sapphire Eye 250 enables easy measurement and analysis of wireless network performance and fast deployment through the enterprise or remote sites without the need for expert installation.
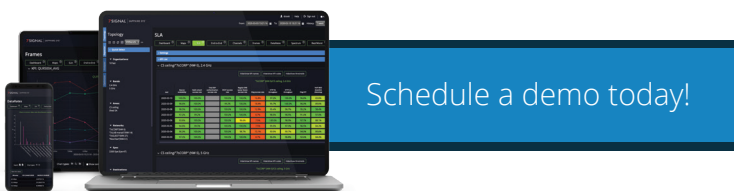
HOW IT WORKS

The 802.11ac Wave 1 sensor utilizes a MIMO, dual band (2.4GHz and 5GHz) 3x3 antenna with 4dBi gain. This provides signal amplification and enables connections with 1 to 3 access points at -65dBm or better. This ensures accurate active measurements from a single location. Data collected by the sensor is sent to the cloud for analysis by the 7SIGNAL platform and translated into actionable insights to resolve connectivity issues and ensure high-quality Wi-Fi performance.

THE KEY DIFFERENCE

Unlike your Wireless LAN vendor, the Sapphire Eye 250 sensor provides visibility of the Wi-Fi experience from the end-user's point of view. The sensor "lives on the edge," where the wireless experience matters most. Complement your access points with 7SIGNAL sensors that capture and analyze the entire RF environment and measure Ethernet connections separately from Wi-Fi.

Schedule a demo today!

AT A GLANCE

- Portable enterprise-grade OTA Wi-Fi sensor with easy deployment to remote locations

- Continuous monitoring and testing for WLAN, LAN, and WAN

- Easily perform remote troubleshooting

- Identify digital experience performance gaps

- Configurable root cause alarms

- Reduce mean time to resolution

- SLA compliance on over 600 KPIs

7SIGNAL®

A COMPREHENSIVE WI-FI PERFORMANCE SENSOR

Sapphire Eye® 250 sensors capture and analyze the entire RF environment and Ethernet connections. Its full range of capabilities are listed below.

SYNTHETIC TESTS (L1-L7)

24x7 Wi-Fi & Ethernet interfaces

Beacon, association, authentication, captive portal, DHCP

FTP, PING, HTTP, SIP, VOIP

Throughput, packet loss, latency, jitter, MOS

KPIs for each AP, SSID and Sonar

RF ANALYSIS (L1-L2)

Full spectrum analysis

KPIs for each AP and channel

Access point settings, capabilities, signal levels, channels, noise levels

TROUBLESHOOTING

Historical data for passive and actives tests (90 days)

Remote over-the-air (OTA) packet capture

Actionable data from alarms point to root cause quickly

Manual test execution from remote locations

Out of band troubleshooting with zero impact to the Wi-Fi environment

TRAFFIC ANALYSIS (L2)

Automated passive tests

Remote over-the-air (OTA) packet capture

KPIs for each client, SSID, AP, and band

802.11 frame analysis for traffic flow between clients and access points

Statistics for all 802.11 frame types, reason codes and status codes

SPECTRUM ANALYSIS (L1)

Automated passive tests

High resolution 2.4 and 5 GHz spectrum analysis

Chart types include waterfall, line and 3D

Historical spectrum data saved for 2 weeks

FULL PACKET CAPTURE (L1-L2)

Radiotap headers included

Easy export to packet level analyzer, like Wireshark.

Schedule a demo today!

TECHNICAL INFORMATION

WI-FI STANDARD	802.11 a/b/g/n/ac (Wave 1) 3x3:3
PHYSICAL LAYER	DSSS, OFDM, HT, VHT
MODULATION	BPSK, QPSK, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM, 256-QAM
INTEGRATED ANTENNA	Dual band 2.4 GHz/ 5GHz 3x3 antenna
RADIO CHIPSET	Qualcomm-Atheros QCA9880
RF OUTPUT POWER	2.4 GHz – Up to 20 dBm per antenna 5 GHz – Up to 21 dBm per antenna *Regional restrictions may apply
FREQUENCY BANDS	US: 5.180 GHz – 5.825GHz, 2.4 GHz – 2.483GHz
CHANNELS: 802.11A/N/AC	US: 24 channels (ch. 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144, 149, 153, 157, 161, 165)
CHANNELS: 802.11B/G/N	US: 11 channels (ch. 1-11)
SECURITY	64-bit, 128-bit, 152-bit WEP, 128-bit AES, TKIP
AUTHENTICATION	802.1X, PEAP, EAP-TLS, EAP-TTLS, EAP-FAST, WPA1-PSK, WPA2-PSK, Captive Portal
PROCESSOR AND MEMORY	Dual core ARM, up to 1.2GHz 4GB Flash A 1GB DDR3 SDRAM
RADIO FEATURES	Spatial Multiplexing, Cyclic-Delay Diversity(CDD), low-density parity check (LDPC), Maximal Ratio Combining (MRC), Space Time Block Code (STBC), Dynamic Frequency Selection
SPECTRUM ANALYZER	2.4 and 5 GHz spectrum analysis with Qualcomm-Atheros on-chip Spectrum Analyzer
EXTERNAL CONNECTORS	3 port Gigabit Ethernet switch (10/100/1000)
POWER	12V DC power supply included
MECHANICAL	Product was not designed for mounting
ENVIRONMENTAL	Product designed for indoor use
DIMENSIONS	Height: 1.26 in. (32mm) Depth: 3.33 in. (84.5mm) Width: 4.34 in. (110.2mm)
EXTERNAL CONNECTORS	3 port Gigabit Ethernet switch (10/100/1000)
WEIGHT	11 oz

PRODUCT IMAGES

SOFTWARE

Use the Sapphire Eye dashboard to view Wi-Fi experience data from every corner of your global network.