SAPPHIRE EYE® 2200

IMPROVING DIGITAL EXPERIENCES FOR END-USERS

Sapphire Eye® 2200 from 7SIGNAL® is a revolutionary, patented Wi-Fi sensor and software client designed to enhance wireless connections and improve the digital experience of end users and devices. The discreet Sapphire Eye 2200 hardware and 7SIGNAL's Software as a Service (SaaS) platform allow for the measurement and analysis of wireless network performance through the cloud, empowering engineers to provide fast solutions to connectivity issues.

HOW IT WORKS

The 802.11ac Wave 2 Sapphire Eye 2200 utilizes 8 MIMO Yagi antennas (four at 2.4GHz and four at 5GHz). The antennas provide signal amplification and enable visibility with 4 to 6 access points at -65dBm or better. This ensures accurate active measurements from a single remote 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 IT infrastructure monitoring vendors, 7SIGNAL provides visibility of the Wi-Fi experience from the end-user's point of view. 7SIGNAL monitors the edge of the network (Layers 1-7) where the wireless experience matters most.

Schedule a demo today!

AT A GLANCE

- Gain enterprise-wide WLAN visibility, validation and control
- Easily perform remote troubleshooting
- SLA compliance on over 600 KPIs
- Configurable root cause alarms
- Reduce mean time to resolution
- Identify digital experience performance gaps
- Continuous monitoring and testing for WLAN, LAN, and WAN

7SIGNAL
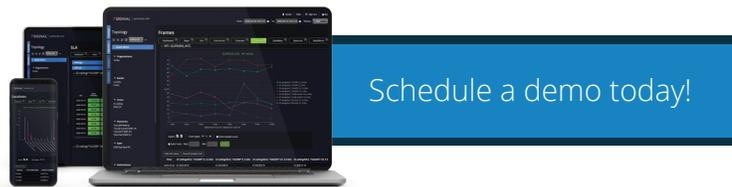
A COMPREHENSIVE WI-FI PERFORMANCE SENSOR

Sapphire Eye® 2200 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.

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TECHNICAL INFORMATION

WI-FI STANDARD	802.11 a/b/g/n/ac (Wave 2) 4x4:4
PHYSICAL LAYER	DSSS, OFDM, HT, VHT
MODULATION	BPSK, QPSK, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM, 256-QAM
SENSITIVITY (TYPICAL)	802.11bg -93dBm @ 6Mbps 802.11gn HT20 -93dBm @ MCS0 802.11gn HT40 -92dBm @ MCS0 802.11a -94dBm @ 6Mbps 802.11n/ac HT20 -94dBm @ MCS0 802.11n/ac HT40 -91dBm @ MCS0 802.11n/ac HT80 -89dBm @ MCS0
INTEGRATED ANTENNA	2.4 GHz / 5 GHz wideband Yagi antennas 8 Antennas (4 at 2.4GHz, 4 at 5GHz)
RADIO CHIPSET	Qualcomm-Atheros QCA9984
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	5.180 GHz – 5.825GHz, 2.4 GHz – 2.490GHz (US, Canada & ETSI)
CHANNELS: 802.11A/N/AC	ETSI: 19 channels (ch. 36, 40, 44, 48, 52, 56, 60, 64,100,104,108,112,116,120,124,128,132,136,140) 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) Japan: 5.17, 5.19, 5.21, 5.23GHz (ch. 34, 38,42,46) band J52: 5.18, 5.20, 5.22, 5.24, 5.26, 5.28, 5.30, 5.32GHz (ch. 36, 40, 44, 48, 52, 56, 60, 64)
CHANNELS: 802.11B/G/N	ETSI: 13 (ch.1-13) US/Canada: 11 (ch. 1-11) France: 4 (10-13) Japan: 14 (1-14) 11b Japan: 13 (1-13) 11g
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	800 MHz dual core ARM 1GB FLASH 512MB 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	Gigabit Ethernet 10/100/1,000 DC power adapter, mini-USB Console port

TECHNICAL INFORMATION (CONTINUED)

POWER	Power over Ethernet (PoE/PoE+) IEEE802.3af/at (48V) 12V DC, 1A, external power supply sold separately
MECHANICAL	Ceiling mount with T-bar clips included Wall mounting kit sold separately
ENVIRONMENTAL	Operating temperature: 32F ~ +122F (0C ~ +50C) Storage temperature: -40F ~ +185F (-40C ~ +85C) Environment: IP44, indoor usage
DIMENSIONS	Height: 2.7 in. (68.5mm) Max diameter: 8.7 in. (221mm)
WEIGHT	1.4 lb 22.4 oz .625 kg

PRODUCT IMAGES

SOFTWARE

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