The Intelligence in Wi-Fi: How Wi-Fi 7 Became an AI Technology

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The development and evolution of wireless connectivity - that is, the means by which data flows between devices and networks - up to now primarily focused on its utility in terms of throughput. Every generation of Wi-Fi standard since 802.11b has been designed to make connectivity technology faster, more reliable, and more efficient. However, the SYN765x, which Synaptics announced on March 10, 2026, is built on a different premise. Synaptics' new Wi-Fi solution isn't only about moving data across devices and networks. The SYN765x is designed to offer a different kind of utility - in which Wi-Fi radio, when paired with an on-chip processor and machine learning capability, can derive information about the physical environment.[1]

Sensing Through the Signal

When a Wi-Fi signal travels across a room, it does not travel in a single clean line. It reflects off walls, diffracts around furniture, and scatters when it encounters people or moving objects. Each of those interactions leaves a measurable signature in the signal. "Channel State Information," or CSI, is the dataset that captures those signatures - recording amplitude, phase, and frequency characteristics across multiple signal paths simultaneously. The SYN765x's on-chip NPU processes CSI data using machine learning models in real time, enabling the system to interpret signal patterns to infer whether a person is present, where movement may be occurring, and how close an object or person may be to the device. The sensing is environmental: the chip is designed to detect physical conditions in the space around it, using the Wi-Fi radio it is already operating as the sensor. The results can include presence detection, motion tracking, and proximity awareness without additional hardware, like a separate sensor or dedicated radar.[2]

Bluetooth Channel Sounding, also integrated in the SYN765x, enables reliable distance measurement under typical operating conditions - an approach we believe offers a cost-effective alternative to technologies such as millimeter wave radar or ultra-wideband for applications where ranging matters.[2]

The SYN765x is designed to function as a connectivity chip that also serves as a sensing platform, running at the edge of the network.

A Leaner Bill of Materials for Smart Home and Industrial IoT

A smart home implementation includes several sensors - occupancy, motion, and proximity sensors - each adding cost, complexity, and a potential point of failure. Wi-Fi sensing changes the economics as the device can detect occupancy through its radio and does not require a separate passive infrared (PIR) sensor.

A hub that can track presence across rooms through existing Wi-Fi infrastructure does not need a distributed sensor network. The connectivity layer and the sensing layer begin to converge.

Gilles Drieu, Chief Technology Officer of ADT, described the commercial logic of the SYN765x: connectivity is at the heart of what ADT delivers to customers, and Synaptics' portfolio gives ADT the flexibility and performance to design next-generation systems that protect homes more effectively while remaining simple to deploy and manage.[3]

For industrial IoT, the argument follows the same logic. Predictive maintenance, safety monitoring, and asset tracking have historically required dedicated sensor infrastructure. Deriving environmental intelligence from wireless connectivity using on-device processing that meets industrial latency and reliability requirements can reduce both the cost and engineering complexity of deployment.

The SYN765x is designed to operate as a co-processor alongside a host application processor or MCU, as well as in standalone configurations where it functions as the primary intelligence in a device without a separate microcontroller.2 We have reported that it is expected to deliver up to 25 percent lower reference bill of materials cost compared to comparable multi-chip designs.[2]

Where Connectivity Fits in the Astra Platform

The SYN765x integrates Wi-Fi 7, Bluetooth LE 6.0, and Thread/Zigbee across 2.4, 5, and 6 GHz bands.2 It sits within the broader Astra platform architecture alongside the Astra SL2610, SR80, and SRW1500 - a family of products designed to cover the full edge AI application spectrum, from MCU-class connected devices to application-processor-class multimodal compute, under a single open toolchain. The connectivity and the compute layer are intended to work together as a coherent foundation.

Mohit Agrawal, Global Practice Head for Edge AI and IoT at Counterpoint Research, has described the broader shift in terms of latency, privacy, and bandwidth efficiency driving the move from cloud-centric IoT architectures to real-time edge intelligence - and identified those requirements as especially acute across factory equipment, consumer electronics, and wearables.[3]

Andrew Zignani, Senior Research Director at ABI Research, observed that Synaptics' approach, in his view, effectively balances and optimizes computing and reliable, future-proof connectivity to better serve the evolving requirements and growing diversity of product types at the network edge.[3]

The Market Opportunity Ahead

The global IoT connectivity market is large and growing. Synaptics' focus in these markets and technologies is helping expand our Core IoT

opportunities. In Q2 FY26, Synaptics delivered revenue of $302.5 million, up 13 percent year over year - our fifth consecutive quarter of double-digit growth, with Core IoT products growing 53 percent year over year.4 The AI-native connectivity strategy reflected in the SYN765x is designed to extend Synaptics' presence in these markets as Wi-Fi 7 adoption broadens across smart home, industrial IoT, and connected enterprise.

Looking Ahead

The SYN765x is expected to begin sampling in the second calendar quarter of 2026, with production currently targeted at the last calendar quarter of 2026.[2]

We welcome investors, customers, and partners to explore what robust wireless connectivity means for the next generation of intelligent edge devices - and how the convergence of sensing and connectivity on a single chip can reshape the architecture of the end products.

Forward-Looking Safe-Harbor Statement

This article contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding product sampling and production timelines, expected cost, product capability and performance characteristics, market adoption of Wi-Fi 7 and edge AI technologies, and competitive positioning. These statements are based on current expectations, estimates, assumptions and projections and involve known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed or implied. Risks and uncertainties include, but are not limited to: macroeconomic conditions; trade tensions and the uncertainty of tariff impacts; supply chain constraints; manufacturing and yield challenges; inflationary pressures; shifts in customer demand; competitive product offerings and technological developments; the pace of adoption of Wi-Fi 7, IoT connectivity, and edge AI and related technologies; regulatory developments; and delays in product development, qualification, sampling, or volume production. For more information regarding these and other risks, please refer to the “Risk Factors” sections of Synaptics’ most recent Form 10-K and Form 10-Q filings with the Securities and Exchange Commission. Readers should not place undue reliance on forward-looking statements, which speak only as of the date of this publication. Synaptics undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information or future events, or otherwise, except as required by law.

Source Attribution

All factual claims in this article draw from the following public sources:

1. Synaptics Press Release, "Synaptics Introduces SYN765x, an Industry-Leading AI-Native Wi-Fi 7 Solution for Integrated IoT Edge Applications," March 10, 2026 (GlobeNewswire). Product announcement and strategic framing.

2. Ibid. Product specifications: Wi-Fi 7 + Bluetooth LE 6.0 + Thread/Zigbee across 2.4, 5, and 6 GHz; on-chip NPU/DSP; Wi-Fi sensing via CSI extraction and on-device ML (presence detection, motion tracking, proximity awareness); Bluetooth Channel Sounding for distance measurement; standalone operation; up to 25 percent lower reference BOM versus comparable multi-chip designs; sampling Q2 2026, production Q4 2026.

3. Ibid. Third-party quotes: Gilles Drieu, CTO, ADT; Andrew Zignani, Senior Research Director, ABI Research; Mohit Agrawal, Global Practice Head for Edge AI and IoT, Counterpoint Research.

4. Synaptics Q2 FY26 Earnings Release and Conference Call Transcript, February 5, 2026. Revenue of $302.5 million, Core IoT +53 percent year over year, fifth consecutive quarter of double-digit growth.

Meta Description (suggested):

Synaptics explains how the SYN765x - a single-chip Wi-Fi 7 solution with integrated AI processing and wireless sensing - reframes the connectivity chip as an AI device, and what that means for the smart home, industrial IoT, and edge AI markets.