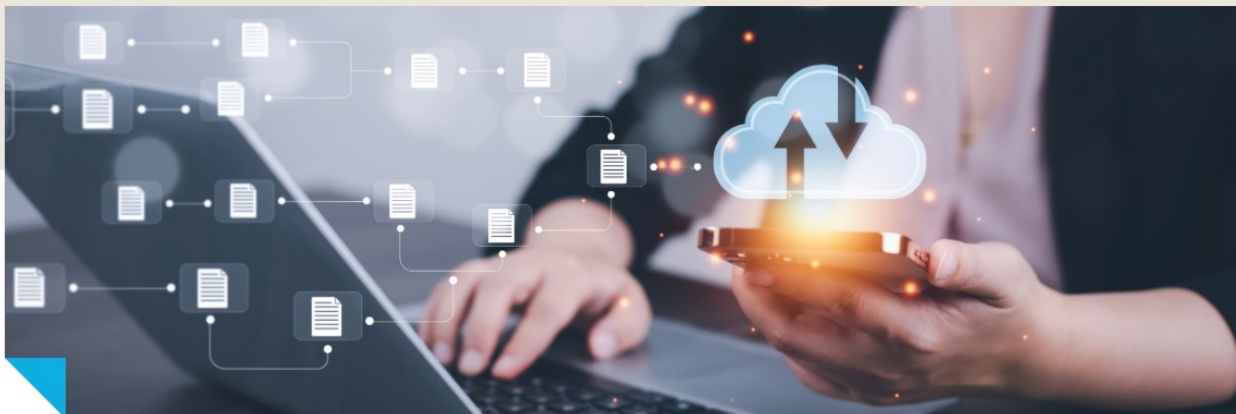


An Integrated Solution for Connecting Bluetooth Devices to the Cloud



December 3, 2025 by [Kyle Dando](#)



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As IoT ecosystems evolve, developers will face the challenge of connecting devices to the cloud efficiently, yet securely. While Wi-Fi and cellular connectivity have traditionally dominated this space, Bluetooth® devices are increasingly integrated into cloud workflows. For low-power, short-range devices, this unlocks new possibilities.

Bluetooth devices are widely used for sensors, wearables and other embedded applications. However, historically, streaming data from these devices to the cloud has been complex. For example, unlike Wi-Fi or cellular devices, Bluetooth devices lack an IP address, preventing them from connecting directly to cloud services.

Goloth: Your Serial Port to the Cloud

[Goloth](#), an NXP partner specializing in cloud services, serves to bridge the gap between manufacturers and internet connectivity by providing a secure, production-ready IoT middleware solution for connecting embedded devices to the cloud. By supporting a seamless connection of devices to the cloud, Goloth empowers manufacturers to maximize data utility and improve operational efficiency.

Cloud connectivity typically focuses on devices that are directly connected through cellular or Wi-Fi. [Goloth](#) addresses this gap with Pouch, a solution that allows Bluetooth devices—which are typically not internet-ready—to communicate with the cloud through encrypted data packets transported through a gateway.

Together, NXP and Goloth support Bluetooth cloud connectivity. To learn more, check out the Techcast episode—joined by Goloth CEO Jonathan Beri—on [Spotify](#) or [YouTube](#).

How Does Pouch Work?

Pouch serves as an encapsulation technology for Bluetooth data packets, allowing secure and sufficient transmission through a gateway to the cloud. This is achieved in the following ways:

1. Encryption at the Source

Based on credentials provisioned for the device and project, the Bluetooth device uses a certificate and key pair to encrypt its data payload.

2. Data Wrapping

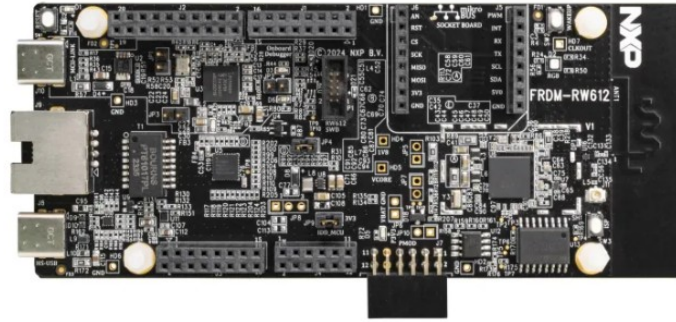
The encrypted payload is packaged with headers and information into a “Pouch” that includes information about the device identity and project association.

3. Gateway Transit

A gateway, such as NXP’s [FRDM-RW612](#), forwards the Pouch packet to the Goloth cloud without decrypting or modifying the data, simply transporting it.

4. Cloud Validation

When the packet reaches the Goliath cloud, the cloud checks the Root CA to verify the device certificate and confirms the gateway is authorized for the same project.



As part of the Pouch solution, NXP's FRDM-RW612 can be used as a gateway for Bluetooth cloud connectivity.

Collaboration with Zephyr

As a founding member of the Zephyr Project, NXP has contributed significantly to the community, providing a wireless portfolio that is supported by Zephyr. Building on this foundation, Goliath also integrates Zephyr for its cloud connectivity solutions. As an early adopter, Goliath benefits from Zephyr's cross-platform capabilities and extensive vendor support, including seamless integration with NXP parts. This collaboration accelerates deployment for new Bluetooth platforms, enhancing Goliath's ability to developers their products to market more efficiently.

Discover NXP's wireless connectivity supported by Zephyr. Learn more about [NXP's wireless Zephyr enablement](#) or explore [NXP's Wi-Fi driver](#) support in the Zephyr upstream.

Getting Started with NXP's Bluetooth Gateway Solution

By utilizing NXP's wireless development boards, the FRDM-RW612 and FRDM-MCX W71, developers can quickly get started with example code and connect their devices to the cloud. These boards specifically can be used as gateways for Bluetooth cloud connectivity.

Ready to see for yourself how Bluetooth devices connect to the cloud using NXP hardware and Goliath software solutions? Get started with [this software example](#).

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Kyle Dando is passionate about helping engineers learn how to use the tools required for their embedded designs. At NXP, Kyle is focused on improving the ways that enablement software is delivered. He is working with the wireless team to simplify how developers get started with NXP wireless microcontrollers. He holds

Computer and Electrical Engineering degrees from Purdue University and Santa Clara University. His work experience includes hardware and software design, and teaching countless customer events on various embedded design tools.