



Empowering EVSE Manufacturers:

Unleashing the Potential
of Cloud Connectivity with
Blues' Notecard and Notehub



The electrical vehicle (EV) industry is experiencing an unprecedented surge, driven by cash incentives and a global race to adopt sustainable mobility solutions. Electric Vehicle Supply Equipment (EVSE) manufacturers are now at the forefront of innovation, working tirelessly to build scalable solutions for EVSE infrastructure. At the heart of this evolution lies the need for reliable cloud connectivity that enables data transmission, real-time monitoring, and enhanced customer experiences.

Blues, the industry's leading IoT connectivity solutions provider, presents a game-changing solution for EVSE manufacturers: [the Notecard](#). Let's explore the transformative potential of Notecard to unlock the power of cloud connectivity for EVSE manufacturers.

Challenges Faced by EVSE Manufacturers

Let's begin by addressing the challenges EVSE manufacturers face when attempting to build connectivity solutions in-house. Many manufacturers are tempted to take on this complex task. However, this decision can be detrimental in the long run. The challenges they encounter include:

- **Cost and Time Overruns:** Attempting to build and maintain a connectivity suite in-house can lead to significant cost escalation and, more critically, prolonged development timelines, causing companies to get stuck in a development loop. These time overruns can be particularly detrimental to EVSE manufacturers, as the market demands swift product entry and a competitive edge. It's essential to recognize the potential risks of time delays, as the industry's fast pace can make recovering from setbacks challenging.
- **Security Concerns:** Solutions built in-house may lack robust security measures, exposing the manufacturer to data breaches, regulatory issues, and damage to brand reputation.
- **Reliability and Expertise:** Building a reliable and efficient connectivity suite demands expertise that may not exist within the manufacturer's core team, leading to bandwidth issues, unforeseen delays, and costly new hires or contractors. Ineffective solutions lead to customer dissatisfaction.
- **Flexibility and Compatibility:** Developing a solution from scratch may limit flexibility and compatibility with various hardware, programming languages, and endpoints, hindering scalability.
- **Provisioning Complexity:** Dealing with cellular networks, SIM cards, and provisioning processes can be time-consuming and cumbersome for new EVSE manufacturers.
- **Compliance and Certification:** Original Equipment Manufacturers (OEM) must ensure their chargers meet safety standards, interoperability requirements, and compatibility with international charging protocols. EVSE must also undergo rigorous testing and certification processes. Obtaining the necessary certifications and approvals from regulatory bodies can be time-consuming and resource-intensive.
- **Supply Chain and Component Sourcing:** Establishing a robust supply chain for sourcing components such as charging connectors, cables, power modules, and communication systems, is essential. OEMs must identify reliable suppliers, ensure component quality and availability, and manage the logistics effectively. An overreliance on supply chain can cause drastic time-to-market disruptions, paving the way for competitors to take the lead.

Advantages of Leveraging Cloud Connectivity for EVSE

Cloud connectivity presents a game-changing solution that empowers EVSE infrastructure with real-time data transmission, remote monitoring, and enhanced user engagement. Cloud-connected EVSE serve as data hubs, offloading crucial information to the cloud for analysis and actionable insights. Three primary types of data are offloaded during usage:

- **Charging Session Data:** Information about charging sessions, including start and end times, energy consumed, and charging rates, is sent to the cloud. This data enables manufacturers to analyze charging patterns and user behavior, optimizing charging efficiency and addressing user needs.
- **Diagnostic Data:** EVSE relay real-time diagnostic information to the cloud, such as performance metrics, health status, and potential faults. Manufacturers leverage this data for predictive maintenance, reducing downtime, and ensuring charger reliability.
- **User Data:** Cloud-connected chargers may collect user data for authentication, payment processing, and personalized charging experiences. Ensuring robust privacy and data security measures are vital to safeguard this sensitive information and gain user trust.

Navigating the dynamic landscape poses unique challenges for the industry. Cloud-connected EVSE address a lot of these hurdles:

- **Accelerated Time-to-Market:** Cloud connectivity reduces the need for in-house development of complex connectivity solutions, thus addressing the challenge of cost and time overruns. With cloud solutions, manufacturers can avoid prolonged development timelines and costly new hires or contractors, accelerating the time-to-market for their EVSE products.
- **Optimized Charging Performance:** The charging levels and performance of the modules depend on the classes of EVSE. Level 1 operates at 120V, Level 2 operates at 240V, while Level 3 chargers are DC-to-DC and the most expensive. Level 3 chargers are commonly used by operators due to their fast charging capabilities but are less practical for residential use due to their cost. Cloud connectivity enables prompt updates and maintenance

across different EVSE classes, optimizing charging performance and ensuring seamless charging experiences for users. Enhanced monitoring helps overcome reliability and expertise challenges, ensuring efficient charger operations.

- **Scalable and Adaptive Solutions:** Cloud connectivity offers the advantage of scalability and adaptability, addressing the challenge of flexibility and compatibility. Manufacturers can develop solutions that are compatible with various hardware, programming languages, and endpoints, allowing for easy integration with existing infrastructure and future technology advancements.
- **Remote Monitoring and Management:** EVSEs need to operate around-the-clock to cater to the needs of electric vehicle owners. Cloud connectivity allows manufacturers to remotely monitor charging sessions, gather real-time data on charging sessions, performance metrics, and identify potential faults or issues. This enables them to proactively address problems, perform maintenance, and update the chargers' software without physically accessing each charger.
- **User Convenience and Engagement:** Cloud-connected chargers enable seamless user experiences through mobile apps and web portals. EV drivers can easily locate available chargers, check charging statuses, and initiate charging sessions, fostering customer loyalty and satisfaction. Operators can remotely manage multiple charging stations, track revenue, and adjust pricing.
- **Load Balancing and Demand Response:** Cloud-connected chargers can be integrated into smart charging networks, allowing for load balancing and demand response capabilities. This means the chargers can adjust their charging rates based on grid demand, renewable energy availability, or other factors, helping to avoid grid stress during peak times.
- **Firmware Updates and Enhancements:** Cloud connectivity enables the manufacturer to push firmware updates and enhancements to the chargers remotely. This ensures that the chargers stay up-to-date with the latest features, improvements, and security patches, enhancing the user experience and extending the chargers' lifespan. These enhancements take care of any provisioning complexity, providing prompt and efficient updates to keep EVSE systems current.

- **Streamlined Compliance and Certification:** Cloud-connected EVSEs can undergo rigorous testing and certification processes more efficiently, ensuring they meet safety standards, interoperability requirements, and compatibility with international charging protocols.
- **Payment and Billing Solutions:** Cloud-connected chargers streamline payment and billing processes, enhancing the overall user experience. Drivers can make payments conveniently through various methods, such as credit cards or mobile apps, and receive detailed billing statements for their charging sessions.
- **Enhanced Security:** While cloud connectivity raises concerns about security, a reputable manufacturer can implement robust security measures to protect user data and prevent unauthorized access to chargers. Cloud infrastructure often provides better security mechanisms than local networks.
- **Future-Proofing:** As the EV industry evolves, cloud connectivity will likely play an increasingly important role. By cloud-connecting their chargers, manufacturers position themselves to adapt to new technological advancements and industry standards in the future.

Introducing Notecard and Notehub: Elevating EVSE Connectivity

[Notecard](#) is a revolutionary module that reshapes the landscape of EVSE. At its core, Notecard is an easy-to-integrate wireless IoT module designed to embed into all 3 levels of EVSE hardware, enabling swift and secure data transmission to [Notehub](#), Blues' robust and secure cloud platform. Notehub serves as the central command center, empowering EVSE manufacturers with real-time data insights, remote monitoring, and seamless management of their charging infrastructure.

With simplicity and efficiency as its guiding principles, Notecard liberates EVSE manufacturers from the complexities of in-house connectivity development. It provides them with a comprehensive, pre-configured package that guarantees reliability, security, and scalability.

Pioneering the Future of EVSE Connectivity with Blues' Notecard

Manufacturers are on a relentless quest to innovate, deliver cutting-edge solutions, and shape a sustainable future in the competitive landscape of EVSE. Notecard has emerged as a game-changing solution because of its unique ability to empower EVSE manufacturers to transcend the boundaries of traditional connectivity.

Let's explore five unique ways the Notecard addresses core challenges faced by EVSE manufacturers.

1. Security - Safeguarding Your Trust

Blues recognizes that security is the bedrock of trust for customers and manufacturers alike. In the highly interconnected world of EVSE, where data privacy and integrity are paramount, Blues' Notecard and Notehub set the standard for safeguarding data and privacy.

Here's how:

- **End-to-End Data Encryption:** Every bit of data transmitted to and from the Notehub is enveloped in robust end-to-end encryption, ensuring that sensitive information remains impregnable to potential threats.
- **Individual Certificate for Cellular Modem:** Notecard takes security a step further by outfitting each unit with a unique digital certificate, establishing barriers against unauthorized access.
- **Controlled Data Egress:** Customers have complete control over their data and how it is stored and handled once the Notecard sends it to [Notehub](#), Blues hosted service for securely routing Notecard data to your cloud application of choice. This reinforces trust in the EVSE ecosystem.
- **Secure Boot and Secure Element:** Notecard's secure boot ensures that only authenticated code runs on the device. The integration of a secure element provides an added layer of protection for cryptographic operations.
- **OTA Security Updates:** Over-The-Air (OTA) security updates are delivered to Notecard units, shielding them from emerging threats and vulnerabilities.

2. Reliable Connectivity and Ease of Use

Building an in-house connectivity suite is often riddled with complexities and uncertainties. Blues has reshaped the narrative by crafting a turnkey solution that prioritizes reliability and ease of use. As a result, Notecard is designed to be a user-friendly connectivity suite that ushers manufacturers into unparalleled convenience and efficiency.

- **Turnkey Connectivity Solution:** From its inception, Notecard has been designed as a comprehensive package to eliminate the burden of piecing together disparate elements. It allows manufacturers to concentrate on their core competencies without the burden of connectivity complexities.
- **Compatibility with Any Microcontroller and Endpoint:** Blues has engineered Notecard to integrate with any microcontroller or endpoint. This freedom empowers manufacturers with unmatched flexibility and adaptability.
- **MinSpin Service:** Rapid prototyping and deployment have never been easier. Blues' MinSpin service offers free engineering support that enables manufacturers to swiftly deploy their products without incurring additional engineering overheads.
- **Remote Diagnostics and Troubleshooting:** Manufacturers can remotely access and diagnose Notecard-enabled EVSE, pinpointing potential issues, and streamlining troubleshooting processes. This reduces downtime, optimizes charger performance, and enhances customer satisfaction.

3. Flexible Pricing - Enhancing Your Bottom Line

Notecard towers above the competition with its unique and customer-centric pricing model. Blues understands the challenges that EV manufacturers face, and our flexible pricing approach reflects our commitment to meeting their evolving needs.

- **All-in-One Bundled Solution:** Unlike subscription-based competitors, Notecard's consumption-based pricing bundles Notehub connectivity and data in one package to provide a cost-effective solution. Blues offers 500 MB of data, lasting up to 10 years, and cloud credits with every Notecard purchase, enhancing the value of the offering.
- **No Contracts, No Subscription Model:** Blues believes in empowering customers with pricing flexibility, helping them avoid

restrictive long-term contracts. This allows clients to adjust their engagement as they scale.

- **Optimized Data Consumption:** Our engineers expertly program devices to transmit only mission-critical data to the cloud, ensuring efficient data usage and cost savings. With Blues, customers pay for only what they truly use.
- **Dynamic Data Allocation:** Notecard allows manufacturers to allocate data based on usage patterns, ensuring resources are allocated efficiently. This optimizes data consumption and reduces costs.
- **Data-Driven Decision Making:** Notehub collects data from a fleet of cloud-connected chargers, allowing the OEMs and SIs to gain valuable insights into charging patterns, usage trends, and energy consumption. This data can be used to optimize charger performance, design more efficient chargers, and inform future product development.

4. Accelerated Time to Market - Surging Ahead of the Curve

In the dynamic world of EVSE, a swift time-to-market can make all the difference in establishing market leadership. Notecard's inherent advantages help reduce development timelines and empower manufacturers to seize opportunities with speed.

- **Integration with EVSE Infrastructure:** Notecard's design integrates with existing EVSE infrastructure, allowing manufacturers to implement cloud connectivity without major overhauls. This compatibility expedites the development process, giving you a working prototype in just 1-2 days. These prototypes are fully in compliance and have proper certification for immediate use.
- **Certifications and Compliance:** Notecard comes equipped with essential certifications, ensuring compliance with industry standards and regulations. This eliminates the need for manufacturers to navigate complex certification processes and opens up a faster path to the market for EVSE solutions.
- **Effortless Prototyping and Deployment:** Blues' MinSpin service further accelerates the time-to-market advantage of its solution. Through our free engineering services, we ensure manufacturers can rapidly prototype and launch their products to unlock a competitive edge without subjecting them to supply chain delays, ensuring there are no cost or time overruns.

- **Simplified BOM and SKU Management:** Gone are the days of grappling with multiple bills of materials (BOM) and stock-keeping units (SKUs). Notecard deploys a single BOM and a single SKU, vastly simplifying inventory management and enabling faster iteration cycles.

5. Provisioning - Empowering Effortless Deployment

Notecard revolutionizes the provisioning process by eliminating complexities and ensuring rapid deployment. Key features include:

- **Plug-and-Play Integration:** Notecard's intuitive plug-and-play design enables manufacturers to integrate Notecard into their EVSE. This straightforward deployment process minimizes complexities, saving time and effort during integration.
- **Faster Time-to-Activation:** Notecard streamlines the activation process, allowing manufacturers to activate devices in minutes. This swift time-to-activation accelerates product deployment, enabling manufacturers to meet market demands promptly.
- **Scale with Ease:** Whether deploying a few units or scaling up to a vast charging network, Notecard's provisioning system ensures consistent and scalable device management. Manufacturers can effortlessly add or remove devices as their EVSE infrastructure expands or evolves.

Transformative Use Cases: Unleashing the Potential of Notecard in EVSE

To understand the transformative impact of Notecard on EVSE manufacturers, let's explore some real-world use cases:

- **Streamlined Payments for Transactions:** Notecard's secure connectivity empowers EVSE to transmit payment data, validating customer payment information. As customers swipe for payments, the charger communicates with the mothership, ensuring smooth and secure transactions that foster trust and loyalty.
- **Empowering Predictive Maintenance:** Real-time monitoring of charger temperatures facilitated by Notecard ushers in a new era of predictive maintenance. Manufacturers can anticipate and address potential issues before they escalate, minimizing downtime and maximizing charger performance. The result - increased reliability, cost savings, and an unrivaled user experience.

- **Harnessing Customer Data for Innovation:** With Notecard's connectivity prowess, manufacturers can collect valuable customer data, unlocking insights that inform product enhancements and spur innovation. By understanding user behavior and preferences, manufacturers can tailor their offerings to meet customer needs, ensuring continued customer satisfaction and loyalty.
- **Access to Customer Applications:** Notecard's seamless connectivity empowers end-users to access charging applications with ease. From scheduling charges to monitoring the charging progress and viewing essential data, customers enjoy a user-friendly experience that fosters engagement and convenience.
- **Enhancing Device Health Monitoring:** Notecard's real-time insights into device health, current, voltage, and temperature elevate device monitoring to new heights. Armed with this critical data, manufacturers can optimize asset performance, extend product lifespans, and achieve substantial cost savings, all while delivering exceptional charging services to their customers.

Empowering EVSE Manufacturers

EVSE manufacturers can soar to new heights of efficiency, reliability, and success with Blues [Notecard](#). This revolutionary solution liberates EV manufacturers from the burdens of in-house expertise and connectivity complexities by embracing the power of secure and reliable cloud connectivity. This critical advantage allows them to focus on their core expertise – designing and manufacturing cutting-edge EVSE units – without the encumbrance of handling intricate connectivity issues.

Notecard is a manufacturer's steadfast ally, streamlining the entire process from prototype to production, enabling rapid deployment and time-to-market acceleration.

By entrusting their connectivity needs to Notecard, manufacturers unlock a realm of possibilities. They gain the freedom to innovate, explore, and expand their offerings, while Blues' expert support and turnkey solutions empower them to scale effortlessly. With Notecard, manufacturers can unleash the full potential of their EVSE solutions and secure their position as industry leaders.

Ready to accelerate your EV connectivity?

Let's talk