



Smart HVACs Manufacturer Secures Supply Chain and Accelerates Growth Using DigiCert ONE Platform



CASE STUDY

Manufacturer of Smart HVACs Secures Supply Chain and Accelerates Growth Using DigiCert® ONE Platform

Executive Summary

Industry: Manufacturing

Headquarters: North America

Key business requirements:

- Adhere to Matter requirements for strong device identity protection
- Ensure integrity of firmware across internal teams and third-party suppliers
- Automate provisioning of device identities at the time of manufacture
- Enforce secure storage and handling of private cryptographic keys throughout the supply chain

Solution:

- DigiCert® Device Trust Manager
- DigiCert® Software Trust Manager

Key benefits:

- Device attestation certificates are issued directly within factory production workflows
- Firmware signing is centrally governed across all internal and third-party teams
- Private key storage is standardized and secured across the entire supply chain
- HVAC system production doubled in one year while maintaining Matter compliance and security

Requirement

Scale manufacturing of Matter-compliant HVAC systems without compromising on security

A global leader in home solutions sought a scalable strategy to make their smart HVAC systems compliant with the evolving Matter standard. Matter creates a universal language for smart devices to communicate across major device ecosystems like Apple Home, Amazon Alexa, and Google Home. But Matter requires the use of PKI for Device Attestation Certificates (DACs) to guarantee digital proof of compliance for secure communications among devices.

The manufacturer knew that traditional processes in attaining Matter certification while keeping up with compliance requirements—and building their own internal public key infrastructure—would require resources that went beyond the company's core expertise. They were already struggling with workflow inefficiencies across their multiple factories due to the fragmented ways TLS/SSL certificates were currently being managed. Also, the complexities involved in embedding security into manufacturing workflows would be difficult to oversee, let alone scale.

To further complicate matters, the company didn't have a centralized way to ensure third-party suppliers handled private keys securely, which could leave the signing of firmware vulnerable to threat actors. "Matter doesn't account for how private keys are stored, and we've heard too many stories of people storing them on desktop computers," noted the company's product security leader. "Obviously we can't afford the possibility of those keys being used to sign malicious software."

The manufacturer wanted a complete solution that could ensure digital trust throughout the lifecycles of their smart HVAC systems—one that could scale with the increase in their production as well as keep up with evolving PKI standards. Fortunately, the company found precisely that within the DigiCert® ONE platform.

"DigiCert ONE not only provided the ideal platform for us to achieve these goals, but it also gave us the ability to scale up production of our HVAC systems to meet increasing demand."



Solution

DigiCert® Device Trust Manager and Software Trust Manager provided a unified approach to security and Matter compliance

The company chose DigiCert® Device Trust Manager and DigiCert® Software Trust Manager, both part of the DigiCert® ONE platform, to create a unified security strategy. This unified strategy would secure their smart HVAC systems, ensure ongoing compliance with Matter, and eliminate security risks in the firmware being used by these smart devices, no matter how many third-party vendors entered their supply chain.

"We had so many requirements—from creating an infrastructure that ensured our HVAC systems stay Matter-compliant to integration within our manufacturing environments. DigiCert ONE not only provided the ideal platform for us to achieve these goals, but it also gave us the ability to scale up production of our HVAC systems to meet increasing demand," said the product security leader.

Streamlining operations with Matter-compliant infrastructure

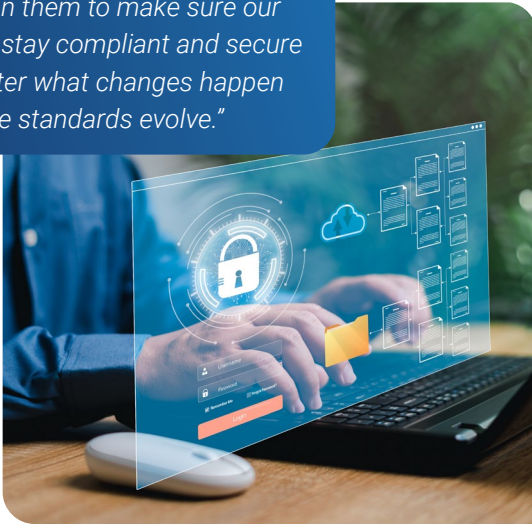
Device Trust Manager supplied the company with an internal PKI that was purpose-built for manufacturing and managing Matter-compliant IoT devices. As the first company to have their Root Certificate Authority approved for Matter device attestation, DigiCert's Product Attestation Authority (PAA) is one of the few trusted certificate authorities that can issue Matter DACs. Consolidating the company's private IoT roots of trust improved overall efficiency, allowing for faster certificate issuance and comprehensive DAC lifecycle management across the company's global factories.

In addition to ensuring compliance with evolving requirements, Device Trust Manager also directly integrated with the intelligent manufacturing services of the company's partners. Now the company could embed issuance of Matter DACs directly into production of wireless modules for the smart HVAC systems, so that every module would be trusted from the moment it leaves the factory.

"Device Trust Manager leveraged our own service to further eliminate the security complexities and subsequently, reduce overhead," said the product security leader. "It enabled us to increase production of our HVAC systems from 30,000 to over 60,000 within the space of a year."



"DigiCert has proven to be the ideal partner for our security strategy going forward. We can count on them to make sure our HVACs stay compliant and secure no matter what changes happen as these standards evolve."



Centralizing firmware signing and private key management

Using Software Trust Manager, the company now had centralized oversight of firmware signing, enabling the company to enforce security policies across their supply chain. By controlling access to signing operations, everyone—including third-party vendors—had to follow standardized, secure signing processes. As a result, firmware updates were consistently signed and protected against tampering. Software Trust Manager also logged all signing activities, providing a complete audit trail for forensics and the capability to maintain compliance with enterprise security policies.

In addition, the company leveraged Software Trust Manager to control private key security, reducing the risk of rogue or malicious code signing using improperly stored and unaccounted for keys. By standardizing the way private keys were being stored and requiring them to adhere to code signing best practices, the company could prevent the risk of unauthorized key access. With these controls in place, this manufacturer could safeguard long-term security and compliance for their smart home devices.

Readying security infrastructure for evolving industry standards

The company was pleased by how effective Device Trust Manager and Software Trust Manager were in providing them with end-to-end protection for the manufacture and distribution of their smart HVAC systems. These DigiCert® ONE solutions enabled them to maintain brand integrity, protect end-user data, and adhere with Matter's stringent industry security requirements while simplifying operations throughout the lifecycle of their smart HVACs.

Building on this early success, the company has begun to expand their use of both DigiCert® ONE solutions to accelerate delivery across similar projects. The ability to scale secure IoT production has reduced risk while speeding time to market in a way that could easily be applied to other smart devices the company produces. Moreover, they felt confident their security infrastructure would easily handle any updates in Matter and other security standards, most notably those related to post-quantum cryptography (PQC).

"DigiCert has proven to be the ideal partner for our security strategy going forward. We can count on them to make sure our HVACs stay compliant and secure no matter what changes happen as these standards evolve," the product security leader said. "We know we're safe, and we can already see the impact this level of trust has had on our sales numbers!"

Learn more about how DigiCert ONE can help you meet your enterprise security challenges and reach out to a DigiCert expert [here](#).

