Streamlining IoT Connectivity

Unleashing the Power of End-Device (Carrier Certified) Embedded Modems

In today's interconnected world, the Internet of Things (IoT) has emerged as a game-changing technology, revolutionizing industries and transforming the way we live and work. From smart homes to industrial automation, IoT devices are enabling seamless communication and data exchange, creating unprecedented opportunities for innovation and efficiency. However, for IoT solutions to thrive, reliable and cost-effective connectivity is essential.

Enter the era of end-device certified embedded modems—state-of-the-art wireless communication modules that are carrier certified. These modems offer a remarkable solution for IoT product developers, helping them save money and accelerate their time-to-market. In this eBook, we will explore the fascinating world of end-device certified embedded modems, delve into their benefits, and uncover the key reasons why they are becoming a game-changer in the IoT landscape.

The Rise of IoT and the Need for Connectivity

The Internet of Things (IoT) is revolutionizing industries by connecting everyday objects to the internet, enabling data exchange and transforming the way we live and work.

IoT devices require reliable connectivity to unleash their full potential, allowing for seamless communication, remote control, and intelligent decision-making.

Cellular connectivity, such as 2G, 3G, 4G, and upcoming 5G networks, plays a crucial role in providing wide coverage and scalability, especially in remote locations or areas without existing infrastructure, making it an ideal solution for IoT connectivity.

What Are Carrier, End-Device Certified Modems?

End-device certified modems are compact, wireless communication modules that directly integrate into IoT devices, eliminating the need for external modems or gateways. These modems support various wireless technologies and communication protocols, ensuring flexibility and adaptability for IoT applications.

Key advantages include end-device certification by cellular network carriers, simplifying the certification process and reducing time and costs. Integrating end-device certified modems streamlines development, reduces complexities, and accelerates prototyping and product iterations.

These modems offer seamless global deployments, compatible with multiple carriers and regions, enabling quick scalability across markets.

End-device certified modems revolutionize IoT connectivity, providing efficient, cost-effective, and globally compatible solutions for faster time-to-market.

Carrier End-Device Certification: Unlocking Efficiency and Cost Savings

Having the End-device certification already completed with the carrier is a key advantage in IoT connectivity. These modems come end-device certified by cellular network carriers, eliminating the need for individual certification processes. This certification saves valuable time and resources, allowing developers to focus on innovation and faster time-to-market for their IoT solutions. The elimination of separate certification costs makes IoT development more cost-effective and accessible to a broader range of innovators and businesses.

Carrier end-device certified modems offer enhanced reliability, compatibility, and seamless connectivity with cellular networks, ensuring uninterrupted data transmission and efficient device management. Carrier certification in the end-device streamlines IoT development, reduces costs, and enables reliable connectivity for accelerated market deployment.

What's more, the right end-device certified modem solution can also alleviate and eliminate cellular design challenges such as:

· Firmware updates over-the-air (FOTA) capabilities
· Power delivery – manage peak requirements
· Device management
· RF design expertise required
· Connect to and gracefully disconnect from network
· Cellular service (3G Shutdown, Carriers, Bands, Roaming)
· Time to market and sustaining engineering requirements

To better clarify, consider that the estimated costs for carrier certification range from $45k to $120k just for the labs and tests. It does not include the engineering time and board spins if changes must be made.

Accelerating Time-to-Market with End Device Embedded Modems

Having the embedded modems already certified with the carrier significantly expedites IoT product time-to-market. Carrier certifications can be a grueling process, take anywhere from six weeks to a year, and can often take multiple attempts. Integration of end-device certified modems simplifies development time and reduces design complexities, streamlining the process for developers. By directly integrating end-device certified modems, developers can rapidly iterate and refine their IoT solutions, leading to faster testing, validation, and optimization, shortening the time required to bring products to market.

End-device certified modems also offer seamless global deployments, as they are compatible with multiple carriers and regions. This compatibility eliminates the need for extensive modifications or additional certifications, enabling swift scaling and deployment across different markets.

Furthermore, end-device embedded modems support various wireless technologies, ensuring that IoT devices can leverage the latest connectivity standards, future-proof the products and allow them to harness faster data speeds, lower latency, and enhanced network capabilities.

In conclusion, end device embedded modems play a crucial role in expediting the time-to-market for IoT products. Their integration simplifies development, facilitates rapid prototyping, and offers global compatibility. With support for diverse wireless technologies, these modems enable IoT solutions to meet market demands quickly and effectively.

Carrier End-Certified Embedded Modems are Something to Think About

In this eBook, we have examined the transformative power of end device embedded modems in the IoT ecosystem. By eliminating the complexity of the certification process, reducing costs, and expediting time-to-market, these modems empower IoT product developers to focus on creating innovative solutions.

With the ability to seamlessly connect to cellular networks and offer global compatibility, end-device certified embedded modems are revolutionizing the way IoT products are developed and deployed, opening new possibilities for a connected future.

End device embedded modems play a crucial role in expediting the time-to-market for IoT products. Their integration simplifies development, facilitates rapid prototyping, and offers global compatibility. With support for diverse wireless technologies, these modems enable IoT solutions to meet market demands quickly and effectively.

So, where can you turn to speed your time to market and drastically reduce costs?

Airgain Offers End-Device Certified Modem Solution(s)

Airgain's large family of patented NimbeLink cellular embedded modems all come certified as an end-device, meaning further carrier certifications for your product are unnecessary. Airgain offers the latest 4G LTE technologies, including LTE-M, NB-IoT, LTE CAT1 and LTE CAT4.

In fact, all Airgain's NimbeLink embedded modem products are built on the same small form factor and are pin-compatible – (essentially future-proof), allowing developers to incorporate future cellular technologies without board-level changes.

Airgain's embedded modems are a cut above, featuring a consistent 20-pin interface, providing an easy migration path to:

- Different module vendors (superseding supply chain issues)
- Future Technologies (3G shutdown, real-time moving to 4G)
- Geographies (seamlessly moving from N. America to Global)
- Known-good RF design / Small Form Factor/ Industrial grade
- Easier to design in / Design flexibility / Direct module access

- Support for multiple cellular technologies
- Globally deployable modems

Organizations that deploy NimbeLink modems enjoy all the benefits of time- and money-saving opportunities when preparing to bring device(s) to market. Further, Airgain's NimbeLink Embedded Modems all include end-device certification, with Airgain going the extra mile to ensure that current and future product iterations will not require further certifications – getting your products to market faster and more cost-effectively than ever before.

GetWireless

Reach out to us for more information or if you have questions.

www.getwirelessllc.com
oemsolutions@getwirelessllc.com

(952) 890-6669

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