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A Qualcomm® Snapdragon™ 800 Processor
Case Study Featuring
Intrinsyc Technologies and
Myth Innovations

At the heart of devices you love

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Introduction: Welcome to Mi World Portable Computing System

Necessity is the mother of invention, as the proverb goes. It was this desire to fill a need that led a father to invent the Mi World™ Portable Computing System (PCS). Powered by the Qualcomm® Snapdragon™ 800 processor from Qualcomm Technologies, Inc., the Mi World PCS is the brainchild of James Luckett, founder and CEO of Myth Innovations, Inc., a Dallas-based technology company.

The Mi World PCS is lightweight and small enough to fit in the palm of a hand, but powerful and secure enough to serve as a personal cloud. It connects to almost any smart device and allows users to store, carry and access data, movies, music, photos, videos and games. It was cutting-edge enough to catch the attention of judges at the Consumer Electronics Show (CES) in Las Vegas, where it was named a 2015 CES Innovation Awards Honoree in the extremely competitive Tablets, E-Readers and Mobile Computing category.

Mi World Portable Computing System

"The Mi World PCS was created out of necessity," explained Luckett. "About five to six years ago, I began driving back and forth regularly between Dallas and Houston with my family. We had some game devices and smart phones, but content was limited, without access to the Internet and/or sufficient storage and streaming capability."

In an effort to keep his young daughter entertained and productive, he built what he described as "a little box," the forerunner of the Mi World PCS. His wife, an attorney and now Myth's general counsel, also wanted more portable storage to hold legal documents and entertainment options for herself during the long drive.

Case Study Highlights

- *Myth Innovations, Inc., a Dallas-based technology company, wanted to maximize the design of their Mi World Portable Computing System (PCS).*
- *Using Myth Innovations' customized version of the Open-Q™ 8074 System on Module from Intrinsyc Technologies featuring the Snapdragon 800 processor, Myth Innovations was able to improve performance, efficiency and multimedia capabilities.*
- *Results—The Mi World PCS is only eight ounces and fits in the palm of a hand, but operates as a powerful and secure server, personal cloud and streaming media solution with a 30-hour battery life. With 2GB of RAM and up to 512GB of onboard storage, it syncs wirelessly with tablets, laptops, smart phones and other devices over a secure AES-encrypted Wi-Fi or Bluetooth® connection and allows users to easily access and share pictures, videos, music and documents. There also exists an incredible array of new network configuration types and possibilities for the Mi World PCS in the Internet of Things (IoT) market.*

Unfortunately, the little box did not meet his family's storage and streaming requirements and also overheated. "We needed much better power efficiency, thermal management, and incredible computing capabilities," said Luckett. "Nothing on the market met my family's needs," he added. "And after speaking with people about it, I quickly learned that my family was not the only one with this problem, so I set out to find a solution – and I did."

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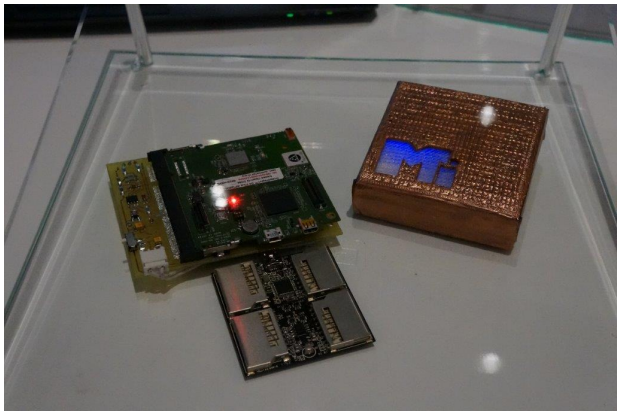
Building Prototypes

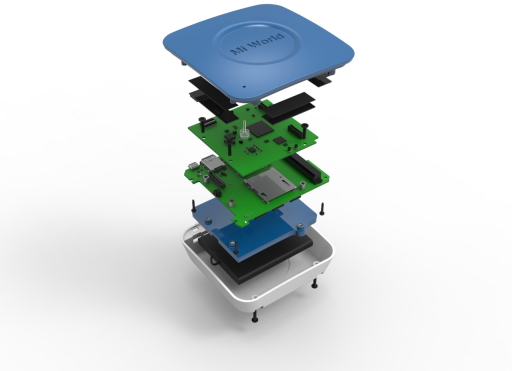
Luckett began building their first prototypes. After looking at a few different options, he determined that Qualcomm Technologies' Snapdragon processors provided the best mix of performance, functionality, and power efficiency. To help with the engineering aspects of the project, Myth began working with the electrical engineering department of the University of North Texas. In September of 2013, the development team demonstrated these first prototypes at Uplinq™ Mobile Device Conference.



Mi World Prototype using System on Module (SoM) Based on Snapdragon 800 processor

Implementing the Snapdragon 800 Processor

Within two months, Myth Innovations switched to the new Open-Q 8074 SoM developed by Intrinsyc Technologies Corporation featuring the Snapdragon 800 processor. The Snapdragon 800 processor is designed to provide outstanding computing performance, power efficiency and rich multimedia capabilities. Myth Innovations continued to work with the University of North Texas to develop the second phase of the units, which they showed off at the CES in January 2014.



Mi World featuring the Snapdragon 800 Processor

Myth Innovations worked with Intrinsyc to develop a customized version of the SoM to better enable all the features required for the Mi World PCS. During development, Myth Innovations also relied on the Qualcomm Developers Network (QDN) for access to development tools, support forums, and documentation. "QDN and other relevant support threads have been incredible and highly informative," said Luckett.

Implementing the Snapdragon 800 processor into the Mi World PCS included one major challenge: the standard SoM, which ran on an Android-based operating system, did not meet all of the software requirements for the Mi World PCS. Luckett discovered this first-hand when he was unable to get the Mi World PCS to work as he expected on a cruise.

"Android, like iOS for iPhone, and Windows mobile, are client-side operating systems. They are designed to be implemented to attract a front-facing consuming audience. They are not designed to handle the server side or a back end sort of arrangement," Luckett explained.

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The Power of Snapdragon 800

- *All-in-one design with integrated technologies increases speed of downloading, multitasking and length of battery life for devices*
- *Includes one of the highest-performing CPUs, with a maximum clock speed of 2.3 GHz, and four cores, resulting in extremely efficient multi-tasking when compared to dual-core processors*
- *Integrated Qualcomm® Adreno™ GPU, a product of Qualcomm Technologies, Inc., and display engine support the most advanced high-resolution mobile display features for better viewing of graphics and gaming experiences*
- *Enables cinema-quality audio and video, noise suppression, frame rate compensation, image scaling, and color and picture adjustments*
- *Supports secure and seamless connectivity, including Wi-Fi and Bluetooth*

He and his team soon realized that they needed a server-specific OS. As a result, they developed nine Linux-based server platforms for ARM-based processors for the Mi World and ultimately their own MiOS. "Our MiOS is giving us the ability to do more at the edge of the network, with the incredible hardware Intrinsyc has created, not only with the Snapdragon processor, but with Qualcomm Atheros' wireless gear, and other services," said Luckett.

Customer Quote

"It means a lot for me to say that the Mi World PCS runs on a Qualcomm Snapdragon. It makes me really proud to have developed the Mi World PCS, and in less than 14 months to date. Again, a big part of the success here is in the product that Qualcomm built and what we have been able to do with it."

- *Jim Luckett, President & Founder*
- *Myth Innovations, Inc.*

Luckett also credits Qualcomm Technologies, Inc. with much of the success of his Mi World PCS. "It means a lot for me to say that the Mi World PCS runs on a Qualcomm Snapdragon application processor. It makes me really proud to have developed the Mi World PCS, and in less than 14 months. Again, a big part of the success here is in the product that Intrinsyc Technologies built based on the Snapdragon processor, and what we have been able to do with it," he said.

Next Steps: A Solution for Everyone

Myth Innovations is in the process of finalizing vendor agreements with large-scale web channels and other companies as it brings the Mi World PCS to market. Luckett is excited about the opportunities he sees for the Mi World PCS to help meet the emerging needs for better operations and communication management, media sharing, storage capability and Internet availability.

These needs are evident everywhere, he explained, including individuals, businesses and the public sector. "It ranges from healthcare to transportation and is as far-reaching as industrial manufacturing," he said.

In addition, Luckett sees the Mi World as a way to provide a connected platform for the fast-emerging Internet of Things (IoT) market, projected to hit $7.1 trillion by 2020, according to research agency International Data Corporation (IDC).

"By turning Mi World PCS into the fully functioning portable server it is today, we are starting to see an incredible array of new IoT network configuration types and possibilities." says Luckett. "The Mi World PCS will provide better communication management at the edge of the network, providing for less traffic from tower to ground. It also provides better security for IoT devices at the edge of the network, along with relational device-to-device authentication."

Less than two years after building his first prototype, Luckett's initial assessment of the need has proved correct. "We came to figure out that this was not just a solution that my daughter needed, but one that everyone seemed to need as well."

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About Intrinsyc

- *Company Name: Intrinsyc Technologies Corporation*
- *Description: QTI licensee and a leader in Snapdragon product development for the embedded systems market.*
- *Location: Vancouver, BC, Canada*

For More Information

- Visit www.mythinnovations.com for more information on the Mi World PCS.
- Visit www.intrinsyc.com for more information on Snapdragon product development.
- Visit www.qualcomm.com/products/snapdragon/embedded-computing for more information on Snapdragon processors and development kits for embedded processing.

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