



We hope all of you are healthy and safe! This pandemic has affected our way of living in multiple ways including our learning and interaction methods. Millions of students worldwide are having their education disrupted by the spread of this virus. Classroom education and in-person training is being transformed to online classes with the use of modern interactive whiteboard technology to assist educators, trainers and corporate communication. Our customers like OneScreen are making sure that individuals can continue to work, teach and collaborate remotely while staying safe and healthy. Sufian Munir, CEO of OneScreen takes his responsibilities as a good corporate citizen and as a human seriously, and has pledged, *"to offer anyone, including our Customers, Partners and Resellers, usage of our browser-based interactive collaboration and distance learning tools at no cost for six months to simplify working scenarios for teams, students and teachers"*. We applaud them for their generosity.

As quarantines ramp up, at-home exercise systems have reported more interest from customers looking to stay fit. Home exercise systems have witnessed a noticeable increase in new purchases.

We at SMART Wireless, remain committed to delivering our products that enable applications like these, on time with the same level of services as during normal business days to all our customers. There will be challenges but we believe patience and partnership will see us through these difficult times. We are here for you!

In this issue of our Newsletter, we share details on an exciting turnkey media streaming product that we will soon launch and a new line of LGA SoMs that we have just announced. We also share details through a case study, of a diagnostic solution that is driven by one of our products. We conclude with a technical article that will enable product creators to execute their neural network algorithms on our platforms running Linux OS!

We hope you enjoy reading our content as much as we love creating it.

Be safe and stay healthy.

Product and Software updates

- An update release on Android for the [Inforce 6701](#) based reference design that provides an improved camera experience and includes performance improvements. Benchmarks like Octane, Jetstream, and MotionMarks and AnTuTu provide much higher scores on this release as compared to our earlier BSP.

Update: BSP V1.1

- An update release on Linux for the [Inforce 6701](#) based reference design that enables more features including USB tethering and Snapdragon Neural Processing Engine running on cDSP.

[Read the blog>>](#)

- An update release on Android Pie for our [Snapdragon 820 platforms](#) that resolves an important bug related to Device ID duplication apart from other bug fixes.

Update: BSP V4.1

Coming Soon – An UltraHD capable market ready platform for media applications



4K STREAMING

SMARTWireless' latest Application Ready Platform is designed exclusively to drive media use-cases in a variety of spaces like digital signage or medical devices in an optimized, reliable and secure digital environment. The platform includes excellent thermal dissipation techniques with an optional fan-less plastic enclosure to enable you to stream/mirror/control and receive UltraHD resolution video content over long durations, uninterrupted.

[Read more >>](#)

SMART Wireless' new line of LGA SoMs



SMARTWireless computing announces a line of compact modules in [LGA packages](#) for specific applications like rugged connected displays and interactive whiteboard hardware.

[Read the Press Release>>](#)

A case study of our solution in motion



Learn about how our product is driving a specific use-case in the medical diagnostics domain that is making a difference in people's lives today!

[Read more >>](#)

Exploit Qualcomm's innovations in AI/ML algorithms and IPs through our products



SMART Wireless Computing platforms based on Qualcomm Snapdragon processors are designed to enable intelligent on-device capabilities and allow running of trained neural networks on-device, without a need for connection to the cloud. We have now enabled this capability on our platforms running Linux OS too!

[Read the Technical Article>>](#)

Coming Soon

An UltraHD capable market ready platform for media applications

Coming soon from SMART Wireless is a turnkey solution based on the Qualcomm® Snapdragon 820™ core. The Inforce 6620™ Application Ready Platform is designed exclusively to drive media applications in a variety of spaces like digital signage or medical devices in an optimized, reliable and secure digital environment. Just plug-and-play and experience the platform's capabilities through the pre-loaded fully functional Android Board Support Package!

Qualcomm's® Snapdragon™ suite of SoC products are synonymous with systems capable of high quality encode and decode and security. The Snapdragon 820 processor, integrates Qualcomm® Kryo™ CPU, Adreno™ 530 GPU, Hexagon™ HVX-512 DSP, Qualcomm® AI Engine and the Spectra™ camera Image Signal Processor (ISP).

- The Kryo 64-bit custom CPU is a combination of ARM V-8 compliant cores grouped as performance cluster and efficiency cluster designed to deliver maximum performance and low power consumption.
- The custom designed Adreno GPU architecture provides high definition graphics and enables smooth rendering of high resolution content while introducing general-purpose compute (GPGPU) co-processing for exceptionally low power consumption.
- The 14-bit Qualcomm Spectra camera ISP unit enables hardware accelerated encode in UltraHD (4K) resolution in HEVC and other video compression standards.
- The Hexagon™ DSP for image and audio processing apart from being a vector-processing powerhouse for process-intensive applications.

SMART Wireless Computing has delivered multiple generations of Snapdragon processor-based embedded computing solutions partnering with Qualcomm. In continuation of its strong product roadmap, SMART Wireless' latest turnkey product combines Snapdragon 820's excellent hardware architecture with home-grown efficient software solutions to provide a complete 4K encode/decode system with wireless content-sharing capabilities. The platform includes excellent thermal dissipation techniques with an optional fan-less plastic enclosure to enable you to stream/mirror/control of high resolution video content over long durations uninterrupted.

- Media use-cases necessitate the presence of HDMI Input for content sharing from laptops, tablets, and mobile devices. The Inforce 6620 platform enables an UltraHD capable 1.4a/b HDMI Input with EDID negotiations and support for InfoFrame data.



- Dual concurrent rendering of independent content on two HDMI Output ports is enabled on this platform. HDMI v2.0 4K60 Ultra HD + HDMI v1.4a/b 1080p60 outputs are possible.
- Wireless connectivity includes Wi-Fi 802.11ac dual band 2.4GHz/5GHz and Bluetooth 4.2. Miracast is supported out-of-the box for sharing content in FullHD resolution.
- The Inforce 6620 platform's gigabit Ethernet port enables Power over Ethernet (PoE) supporting 802.3at complaint PD configuration. The platform can thus be powered independently from PoE-enabled switches.

Our engineers are sprucing up an Android BSP for this new product today and we intend to take pre-orders shortly. Stay tuned for more details on this exciting product!



Compute Intensive Portable Medical Systems

The Challenge

With more access to consumer data than ever before, health organizations face significant challenges in managing, interpreting and protecting patient data.

Interoperability of disparate data sources must be addressed as more devices become connected and need to communicate with each other and with the health organization. Legacy medical imaging systems have used stand-alone DSPs, microcontrollers and FPGAs to perform processing steps such as digital interpolation, decimation, filtering, and reconstruction. These devices also run on inefficient proprietary operating systems producing excess heat causing patient discomfort. Power hungry image processing algorithms that run on such dedicated hardware have become exponentially complex, rendering the CPU, graphics, DSP, and video performance capabilities inadequate. Embedded designers have to also make strict tradeoffs between size, weight, battery life, performance, and cost for portable devices, often compromising on the key requirement of patient comfort.

Molecular Diagnostics is the most recent development in Diagnosis of infectious diseases like the coronavirus. This works on the principle of DNA amplification and thus makes it feasible for early diagnosis of the disease because of its excellent sensitivity and specificity. Unfortunately, this technique is restricted to large central laboratories owing to the need for complex and expensive infrastructure, highly skilled manpower, special storage conditions and need for batch testing. This results in high turnaround times and poses major logistics challenges such as sample degradation, contamination, delays, etc.

SMART Wireless's Solution

SMART Wireless Computing's integrated solutions address the above issues with cost-effective production ready hardware. These solutions fully complement the medical fraternity's domain expertise by taking the compute complexity out of the equation. SMART Wireless's family of multiple generations of Qualcomm® Snapdragon™ processors provide cost effective and high-compute intense CPU, GPU, DSP, and ISP for battery powered connected handheld medical imaging devices. Devices created based on these platforms offer intelligent data analysis, predictive analytics and continuous patient state monitoring resulting in successful diagnoses.

[Molbio Diagnostics](#) has been in the forefront of the global fight in control and management of devastating infectious diseases. Their near-patient molecular imaging legacy platform that was being used to detect a host of infectious diseases very early and at point of care leveraging Micro Electro-Mechanical Systems (MEMS) and Polymerase Chain Reaction ran into integration and connectivity issues. SMART Wireless' compact yet fully-featured SBC based on the 64-bit Snapdragon 410 processor (APQ8016E) provided an excellent replacement for their next generation product.

Their new range of fully automatic portable and battery operated real time quantitative PCR analyzers enable fast, accurate and reliable near-care testing.



These products have recently been [approved](#) to confirm Covid-19 cases by the Indian Council of Medical Research. They are capable of performing up to 48 Tests in 8 Hours and are currently being deployed at multiple hospitals for rapid testing and screening.

Healthcare systems must have the infrastructure, resources and processes in place to crunch the inundation of patient data and extract from it actionable insights. Our platforms' edge compute capabilities enable this for caregivers to use meaningfully.

Medical devices typically require guaranteed long-term supply assurance for availability of parts and no product obsolescence. Customers would also prefer access to next generation Qualcomm Snapdragon technologies, to ensure smoother migration and to remain competitive in the marketplace. SMART Wireless Computing ensures these, apart from having a strict version control for continued hardware/software compatibility.