Ionocom: Delivering decades of electronics innovation

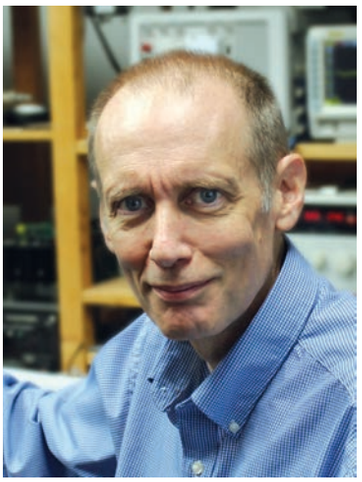
BY MIKE STRAUS, WEST TECH CORRESPONDENT

With more than 20 years of expertise in design and development, electronics contract design company Ionocom Communications Inc. has carved out its distinct domain, focusing on circuit design, printed circuit boards (pcbs), embedded firmware, and PC-based software. Situated in North Vancouver, the company boasts a wealth of experience spanning analog and digital designs, alongside proficiency in microcontrollers and low-power design solutions.

Ionocom's two full-time partners include Nick Massey and Matthew Kendall, a pair of electronics engineers who formerly worked for Racal Research in the United Kingdom. Founded in 1950, Racal was an electronics design company whose products included voice loggers, data recorders, point of sale terminals, and military equipment.

"Nick and I came to Vancouver in the mid-1990s," Kendall says. "We worked for a subsidiary that Racal purchased in Vancouver for several years before it shut down in 2000. We found ourselves in Vancouver wondering what to do, and that's when we decided to start a consulting company doing contract design of electronic products."

Massey's work specialized in tactical radio systems and RF transmitters, while Kendall's focus was on RF hardware and cellular systems. Between the pair of them is 50 years of experience in electronic design.



Matthew Kendall

Nick Massey

Work in many fields

Since its formation in 2000, the company has completed more than 100 projects for clients ranging from start-ups to large multinational corporations. The firm's work spans consumer electronics, professional audio, radio communications, industrial, and military applications.

"We were lucky to get a couple of good clients early on," Kendall notes. "One client developed battery packs for military use, and we still have that client more than 20 years later. The battery and alternative energy scene is strong in Vancouver, so that's been a gateway to some other clients that focus on alternative power or batteries in some way."

Some of the company's projects include computer mice, keyboards, and iPod accessories. One particular project the company completed was a keyboard encoder designed for use with Palm and PocketPC PDAs; the encoder used an infrared link between the PDA and the keyboard and was powered by a single AA cell. More than 100,000 of thes keyboard units were made.

Several of the company's projects are variations on an FM transmitter that enables audio from an iPod to be received by a car radio. One such transmitter permits the use of the iPod display itself as the FM radio interface, eliminating the need for a separate LCD screen. Combined with a compact layout, this provided the client with the smallest device on the market, making it a perfect companion piece of technology for an iPod Nano.

Kendall says that Vancouver has been a good place to operate an electronics business; there's a strong tech sector in the local area. While running a small business comes with a feast-or-famine cycle, he explains, the company has done fairly well at maintaining a consistent flow of business throughout the COVID-19 pandemic.

Simulation and design

Equipped with a wide array of RF and digital test equipment Ionocom's work also spans radio and power testing, while also leveraging custom automated test programs and, a times, assemble prototype units on-site.

The company uses industry-standard CAD tools for schematic capture, simulation, and design; they also provide firmware development and mechanical design services that include embedded processors. Ionocom also has the capacity to upgrade and enhance existing designs, or to even design subsystems within a larger project. The company has extensive experience with microcontrollers, from 8-bit to 32-bit, and can even port prototypes from the Arduino platform.

"One of the nice things about running a company like this is that we get to work on a variety of projects," Kendall notes. "We try to include projects that have some aspect of wireless, because that's our background and specialization. We have a lot of test equipment and tools that other companies don't have."

Kendall says that wireless applications are more popular than ever before, not only among engineers but also among hobbyists. Wireless development technologies like Arduino and the Raspberry Pi are making development more accessible; as a result, clients are now coming to Ionocom with fully fleshed-out prototypes build out of Arduinos or Raspberry Pis.

"I see going forward more projects incorporating wireless as a given," Kendall explains. "We almost never develop chip-level wireless solutions; we're almost always dropping modules onto boards. Our wireless knowledge is now more deployed toward things like antenna system design."

Kendall and Massey also own a side business called Merifix, which manufactures low-cost test fixtures. Merifix has a completely automated process where engineers can upload designs to a website and have an automated system drill the fixtures, which ship same-day. The entire process costs under $200 to the end-user.

"We've shipped those fixtures to Canada, the United States, Europe, Australia, and even New Zealand," Kendall notes. "We usually ship to engineers who are doing low-volume production and need a test fixture to program a microcontroller; it's opened up the accessibility of test fixtures." **EP&T**

Ionocom is an electronic services provider located in North Vancouver BC
www.ionocom.com

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