

Signaling Success: Dawar Technologies Enables Nova Engineering to Achieve Successful Product Launch

case study

When Nova Engineering, one of the world's leaders in wireless communications, was developing a technology that has transformed airborne telemetry systems, it recognized that it would be necessary to completely redesign a crucial component of the system's ground station. The company it called on to assist with this unique challenge was Dawar Technologies. ▲

Since its founding little more than a decade ago, Cincinnati-based Nova Engineering has developed a broad portfolio of experience, including state-of-the-art commercial, government, and military digital communication and signal processing systems. Specializing in wireless communications systems, mobile routers, sensor data transceivers, airborne telemetry devices, and RF (radio frequency) signal sources, the company has earned a reputation for its creativity, innovation, and superior service. It was for all three of these reasons that officials at the U.S. Air Force Advanced Range Telemetry (ARTM) Laboratory at Edwards AFB approached Nova for help in solving a problem that constrained critical aspects of its airborne telemetry testing programs.

“We were very familiar with the challenges affecting airborne telemetry devices,” commented Michael Rauf, director of marketing and sales for Nova Engineering. “ARTM needed to increase the amount

of data they were capturing through their telemetry testing, and our engineers came up with a novel approach that caught their attention,” added Rauf.

“Given that our challenge was to increase the data rates, we knew we had to consider significant changes in the design of the demodulator, a key component of the telemetry system's receiving station used to process the telemetry signal. To help us get the user interface right, we brought in Dawar Technologies.”

One key design change involved the interface between the demodulator and the operators, usually flight test engineers. Previously most demodulators were designed with a display output in the back, requiring the connection of other equipment such as an oscilloscope, for monitoring. The design of Nova's



exceptional
customer service

expert workmanship

proven processes

greater success

Hypermod MMD44 system involved adding a display to the front panel of the unit, permitting flight test engineers to directly observe the signal quality.

“We had already developed a design for the panel, and were ready to send it out to a machine shop,” explained Nova mechanical designer Don Bultman. “That’s when I met with Dennis Stuart from Dawar who showed me some samples of the kinds of membrane switches they were making for their clients. I talked with our president, Don Boyd, and he recommended that we see how Dawar’s design would look on our new telemetry unit. Dawar gave us a quote and we determined it would be very cost-effective to use them.” Bultman added that Dawar has produced and provided the membrane switches directly to Nova, and has actually machined the entire panel and applied the membrane switch in a single step.

DEDICATED TO ITS CUSTOMERS' SUCCESS

“Their turnaround time is very good,” commented Bultman. “After we gave the ‘go-ahead’ for the project, Dawar was able to finalize the design, produce a prototype, and manufacture the final product in a very short period of time.” Dawar’s full service design, engineering, and manufacturing facilities enable it to develop fully customized solutions to meet its customers’ requirements. The company’s emphasis on quality helped it earn its ISO 9001 compliance rating, and its manufacturing capabilities help provide product delivery turnaround times that meet tight deadlines.

“They did an excellent job in designing and manufacturing a membrane switch that included everything we needed,” added Rauf. He explained that, because of the sophistication of the Hypermod MMD44, both the form and function of the control panel were critical. “The design of the new panel membrane switch had to incorporate function switches and LED displays that enable engineers to quickly change the modulation

“They did an excellent job in designing and manufacturing a membrane switch that included everything we needed.”



type, data rates, and other test parameters. The switches are actually buttons embedded in the front panel, raised slightly to provide tactile feedback. Since most users are right-handed, they can easily run through the set-up features and cycle through the various menu options by touch.”

“Because this technology is in a league all its own and, since we currently have limited marketing resources, we also needed help in making sure that our brand stood out on each of our products,” commented Rauf. “Dawar’s crisp-looking graphics help us accomplish that, too.”

When it comes to service, reported Rauf, Dawar has been very responsive. “We’ve had a great experience working with Dawar. We’re actually on our second panel design, based on feedback we have received from our customers. Dawar has worked with us to produce a new panel with larger buttons and fewer LEDs. Dawar made all of the changes we asked for, and made sure we were satisfied with the results.”

Rauf explained how significant the innovation is for airborne telemetry.

“The industry has been waiting for this for some time,” commented Rauf. “Because the RF spectrum that contains the signal is a fixed natural resource limited by the laws of physics, achieving higher data rates means increasing usage of this finite resource. This is not an option as more and more users are vying for the same limited spectrum,” he added, “so this meant developing a new waveform that is spectrally more efficient.”

He explained that, when the military conducts in-flight testing on aircraft and missiles, it relies on the RF spectrum to “carry” the data to ground stations. Sensors mounted on the object transmit a signal to large dish antennas at the ground station, which in turn pass the signal to a receiver. The signal is then converted into data by the demodulator and the flight test engineers evaluate the output.

Concluded Rauf, “Because the Hypermod MMD44 is able to process multiple telemetry signals, it extends range and increases the data capacity of airborne telemetry systems.” *continued on back...*



Hypermod MMD44



Membrane Switches



Graphic Overlays



Smart Cards



Silicon Rubber Keypads



Encapsulated Labels



Roll Labels

DAWAR
technologies
the ultimate impression

Dawar Technologies, Inc.

1020 Ridge Avenue
Pittsburgh, PA 15233
Toll Free: 800.366.1904

P | 412.322.9900

F | 412.322.9959

info@dawar.com

www.dawar.com



A STRATEGIC PARTNERSHIP

“We are excited to work with Nova Engineering,” commented Dawar president and chief executive officer Gary Holcomb, “and provide the user interface that is such an important part of this tremendous new product. We’re proud of the role we’ve played and will continue to do everything we can to help Nova maintain its status as a market leader.”

“There is no question that Dawar’s impact on this project was very important,” said Rauf. “The membrane switch they produced for us gives the demodulator a very different appearance than if we had machined the panel ourselves. Just as important, the appearance and functionality of the panel combine to make the product user-friendlier. This has definitely given us an advantage over all of our competitors.”

For more than 120 years Dawar’s commitment to innovation, quality, and customer satisfaction have not only been vital to its continued growth and success, but have also been key to the success its customers have achieved in the marketplace.

FOR MORE INFORMATION

To learn more about Dawar and its products, contact Dawar Technologies at 800-366-1904 or visit www.dawar.com.