

Eclipse Aviation Corporation



Pioneering Very Light Jet Aircraft Company Uses Compact Notebook PCs from Fujitsu to Extend Flight Management Systems to the Pilot's Laptop—and Beyond

Challenge:

Finding the right notebook PC to run its Avio Flight Bag software under sometimes harsh and crowded cockpit conditions took Eclipse Aviation Corporation more than two years. Reading bright sunlit computer screens and accessing large digital charts and maps in a timely way were particularly challenging.

Solution:

Working with a custom software provider to assemble a complete hardware and software solution, Eclipse Aviation evaluated notebooks from many makers. The small jet pioneer ultimately selected the Fujitsu LifeBook P1610 notebook as the platform for its Avio Flight Bag hardware and software bundle. Pilots use it to read digital charts, calculate fuel and weight requirements, and to prepare for flight from any location.

Benefits:

Fujitsu has helped Eclipse Aviation Corporation to further distinguish its very light jet airplane from older, less capable, and much more expensive small business jets. It helps pilots spend less time preparing flight plans in or out of the airplane and more time actually flying.

“Not only was the Fujitsu P1610’s screen easy to read in bright sunlight, it was also one of only a few units that met our test for performance—that is, to access a ten megabyte chart in three seconds or less.”

**- Matt Brown, Director of Product Marketing,
Eclipse Aviation Corporation**



Pilot prepares for flight with the Fujitsu LifeBook P1610 notebook

With computer innovation all around us, perhaps it’s no surprise that the CEO and founder of the world’s first very light jet aircraft company is a former Microsoft executive. Vern Raburn, CEO of Eclipse Aviation Corporation, accomplished pilot and close friend of Bill Gates, founded his company on a vision that a new generation of very light jet airplanes should follow the same value proposition as personal computers. That is, they should leverage the latest technology, manufacturing techniques, and quality controls to drive new customer value.

Think of it as the Jet Plane Version of Moore’s Law

Raburn’s dream is now realized as Albuquerque-based Eclipse Aviation ships its first model jet. A unique single-pilot jet aircraft, the Eclipse 500 relies heavily on the latest digital technology to make it safer and easier to fly and at half the cost of competitors. Cockpit controls, for example, are managed by an advanced digital avionics system called Avio NG that integrates flight operations under three single pilot displays. Pilots have the option to extend this functionality to outside the aircraft using the Avio Flight Bag hardware and software solution. For this, Eclipse Aviation standardized on the Fujitsu LifeBook® P1610 notebook as its hardware platform with software from Strategic Aero-nautics, a developer of cockpit information systems.

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While Avio NG operates strictly inside the aircraft, the Avio Flight Bag works in concert with the Avio NG from any location. It replaces the 80-pound suitcase pilots would otherwise carry stuffed with charts and graphs, with a lightweight, two pound, Fujitsu notebook containing nearly 15,000 digital documents. The Avio Flight Bag delivers additional functionality as well, such as enabling pilots to calculate fuel requirements and run weight and balance checks from the convenience of their hotel rooms prior to going to the airport.

“With the Fujitsu P1610 notebook, pilots can be ready to fly in just 20 minutes and can plan their flight from any location,” says Matt Brown, director of product marketing at Eclipse Aviation. “Previously that would typically take two hours or more, often with the pilot sitting at the airport or in the plane.”

In the Bag

Planning for the Avio Flight Bag began in 2002 as a pet project of CEO Raburn who believed PC technology could spare pilots from arriving hours early at the airport before every flight. A pilot himself, Raburn knew how much time pilots spent at the airport pouring over charts and graphs in preparation for cross country flights.

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After hiring Strategic Aeronautics to help with software, Eclipse Aviation began searching for the right hardware source. The evaluation process spanned 24 months, included multiple makes and models of notebooks, and was highly selective in order to meet the demanding needs of pilots.

High on the list were size and weight concerns. “There’s very little extra real estate in the cockpit for anything much larger than a sheet of paper,” says Brown. “So we couldn’t have a giant bulky laptop in this very small light jet. The Fujitsu P1610, with its light weight and compact form factor, was the ideal size from the start.”

Having a touch screen capability and tablet mode operation were also considered important as was having a built-in keyboard. Here, too, the Fujitsu P1610 met every benchmark. “Stylus operation is great, but if the pilot does not desire to use the stylus for any reason, the Fujitsu P1610 works just as well in keyboard mode,” says Brown. “That integrated keyboard was really critical for us.”

Because jet airplanes typically fly above the weather in bright sunlight, cockpit lighting conditions pose a major challenge for notebook screens. For many models that were evaluated, Brown says the screen readability was poor. Then, the Eclipse Aviation team received an early demo unit of the Fujitsu P1610. They were immediately won over by its new indoor/outdoor display, energy-efficient Intel processor, and small packaging.

“We went up with our pilots and flew the airplanes with our beta software as part of the evaluation

process,” says Brown. “Not only was the Fujitsu P1610’s screen easy to read in bright sunlight, it was also one of only a few units that met our test for performance—that is, to access a ten megabyte chart in three seconds or less. What’s more, the Fujitsu ran cool and did really well with heat dissipation. In the end, it was a unanimous team decision that this was the right platform for us.”

Good Connections

The Avio Flight Bag is available today as a bundled hardware and software solution for Eclipse Aviation’s customers. In addition to specialized software, pilots receive a standard Fujitsu P1610 running Windows XP Tablet PC Edition, a high-capacity 7.0 hour lithium battery, an 80 GB hard drive, and an 8.9" indoor/outdoor touch screen display. Big charts and other large graphic files load quickly as a result of the video controller, an Intel Graphics Media Accelerator 950. Two USB 2.0 ports, integrated WiFi wireless LAN, Bluetooth 2.0 capability, and a PCMCIA card slot round out the package.

The Avio Flight Bag relies on the Fujitsu 1610 multiple access paths to the Internet for regular software updates. Using a WiFi or other broadband connection, pilots automatically download chart updates to all U.S. airports as well as any modifications to the aircraft manuals. “If we make a change to the aircraft, for example, the flight manuals are immediately modified and updated,” says Brown.

Pilots aren’t required to use the Fujitsu P1610 in order to operate the jet. Still, nearly 80 percent of all Eclipse 500 jets sold today include the Avio Flight Bag option because of the time, weight, and space that it saves.

According to Brown, the next release of the Avio Flight Bag software will save pilots even more time by connecting directly to the jet’s avionics through either one of the USB 2.0 ports or the Fujitsu P1610’s Bluetooth interface. “The day when a pilot can run all of his or her performance calculations through remote software and then load up a file so the plane is instantly queued up and ready to fly is not far off,” says Brown.

Winning Service and Support

Besides being won over by the Fujitsu’s hardware specs, Brown’s team was impressed by the level of service and



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support they received. As Brown puts it, “We had some extremely strict requirements and our demands were pretty intense for any hardware provider to meet. But Fujitsu was very responsive to all of our needs and was always easy to work with.” Two other areas that Brown says helped his company settle on Fujitsu were that company’s no-fault insurance replacement program and three year on-site service plan.

Using their experience with Fujitsu’s support team as a metric for how their own customers were likely to be treated, Eclipse Aviation’s decision to choose Fujitsu was made even easier. “We experienced Fujitsu’s great customer service first hand,” says Brown, “so we figured our own customers would be treated the same way.”