

MEMBER PROFILE

Heads Up Technologies Expands Beyond Digital Audio

BY CHRISTINE KNAUER

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What They Do: Privately owned Heads Up Technologies designs, manufactures and markets a variety of electronic systems for the aviation industry, including digital audio, digital controllers, LED lighting and data-link products.

Date Company Started: 1985

Founded by: Rob Harshaw, Dennis Keith and Tim Doell

AEA Member Since: 1989

Personnel: 46 employees

Facilities: 21,000 square feet of engineering tech space



Heads Up Technologies is licensed by XM to design and manufacture XM technology specifically for the aircraft environment, such as is found in these Heads Up XM radios.

While you might not know the name Heads Up Technologies, you've likely heard of the Rockwell Collins, Avidyne and Honeywell systems in which their products appear. The 46-member, Dallas suburb-based company designs, manufactures and markets a variety of electronics systems uti-

lized in some of the industry's most popular avionics equipment.

"Heads Up is a company that many people don't know. That's because we are primarily a supplier to airframe and avionics manufacturers — oftentimes, providing turn-key private label equipment," said Robert C. Harshaw, president and CEO of Heads Up Technologies.

"While you may not have heard of us, we're making products that you use," he said.

Leveraging its expertise in digital audio, Heads Up Technologies has since expanded its product lines and its facilities. In May, the company received STCs for its new Bluetooth-enabled XM Satellite Radio and XM WX Weather receivers. Last year, Heads Up expanded and remodeled its engineering facility, adding nearly 6,000 square feet of engineering and production space to accommodate its tremendous growth.



At its facility in Carrollton, Texas, a Dallas suburb, Heads Up Technologies employs 46 staff members and has 21,000 square feet of engineering tech space.

“Our product line is pretty broad for a company our size,” Harshaw said, referring to Heads Up Technologies’ more than 40 products. “What’s encouraging to me is that we’re seeing similar demand for all of our products — even our original core products are growing at the same rate.”

Developing the Digital Audio Checklist

Founded in 1985, Heads Up Technologies’ first product provided pilots the convenience and ease of a digital audio checklist.

“The idea for the audio checklist came at a Christmas party. About that time, in 1985, there had been a rash of aircraft accidents in which the failure to perform the checklist was a contributing factor,” Harshaw said. “We thought our approach of using a digital voice to read the checklist one item at a time to the flight crew offered benefits in both safety and convenience for turbine aircraft.”

Later, Heads Up Technologies capitalized on its digital audio experience to create passenger-briefing systems, developing what Harshaw believes is the first digital pre-recorded announcement machines (PRAM).

“We leveraged that digital voice technology once again and started doing annunciators. We now build a variety of annunciators, from the CJs up to the Citation Xs,” he said.

Harshaw said many of the digital voices in the 1980s were computer sounding.

“We recorded a real human voice and played a human voice back. That was kind of novel at the time. Twenty years and 1,500 systems later, the product has a loyal following. We’ve found that most of our customers are repeat purchasers.”

Heads Up Technologies has widened its product line even further with other

Did you know?

The XM WX Weather Service broadcasts the exact same weather data to every aircraft. It is the onboard systems that extract and present the data according to preset parameters based on aircraft type, route and pilot preferences.

“That was one of the unique breakthroughs in the XM Weather System. It really is sending up the entire weather for the U.S. to every airplane all the time,” said Rob Harshaw, president and CEO of Heads Up Technologies.

“In doing so, you can achieve some big efficiencies in terms of cost reduction. Prior to that, weather was a lot more expensive. It is a great way to use the bandwidth efficiently,” he said.

information and warning systems for the cockpit and cabin. The company also has added digital controllers, such as those for heating and cooling, and started producing LED lighting for cabin interiors.

Focusing on Satellite Radio and Weather

Most recently, the company has focused on satellite radio and weather solutions in association with XM. Heads Up Technologies’ receivers provide passengers and crew access to volumes of audio programming, nearly 150 different stations, and extensive weather data.

“Basically, from one antenna, you can get audio entertainment and weather data for your MFD (multi-function

display) or EFB (electronic flight bag), depending on how you choose to display it,” Harshaw said.

Heads Up Technologies did something a little unusual in how it went to market with these products, according to Harshaw.

“We decided to partner with a number of MFD and EFB manufacturers and cabin-management providers. Rather than competing with them, we worked with them to integrate XM into their products. We’re working with companies like Airshow, Audio International, Avidyne, Honeywell, MCC, Rockwell and pretty much all of the OEMs out there.

“We’re providing these products to them and they are then differentiating themselves by how they display, manage and use that information. We build the XM receiver and then help them integrate it into their product.”

Partnering with Avionics, Airframe Manufacturers

When OEMs partner with Heads Up Technologies, they are tapping into the expertise of an experienced team. The company’s engineers have diverse backgrounds and specialties, including physics, military systems, quantum electronics and electro-optics.

“I think the most interesting thing about Heads Up is our wide range of

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Heads Up Technologies received STCs for its new Bluetooth-enabled XM Weather radio receivers. DAC International will distribute the products.

Heads Up Technologies Receives STCs for New Bluetooth-Enabled XM Receivers

In May, Heads Up Technologies, an authorized XM manufacturer, received STCs for its new Bluetooth-enabled XM receivers. DAC International will distribute the products.

The company's new XMD076A retrieves both the XM Satellite Radio and XM WX Satellite Weather Service through a single antenna. The new XMR050, a single-receiver XM radio, is ideal for customers who want an affordable, certified XM radio solution or those who have a previously installed Heads Up XM WX Satellite Weather System (the receivers can be daisy-chained together).

Both systems are compatible with Heads Up Technologies' new XMC050, a Bluetooth wireless remote control that allows passengers and crew to manage XM Radio selections. Unlike traditional infrared remotes requiring line-of-sight transmission, Bluetooth operates through low-density walls and other obstructions.

The OLED (organic light emitting diode) display screen provides information such as category/channel name, channel number, artist name, song title, satellite signal and battery strength.

Users can scroll through the many categories and channels, or simply utilize direct key entry. Presets, mute and volume functions are provided, as well as memory keys that allow users to save up to 10 artist names and song titles for future reference.

HEADS UP TECHNOLOGIES

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capabilities resulting from the diverse backgrounds of our technical staff. Normally, this diversity would be found in a much larger company," Harshaw said.

Not only does Heads Up offer expertise in electrical, mechanical and software engineering commonly found in aviation companies, the company also has experience in some unusual disciplines, such as electro-optics, lasers and scientific computing.

"Our technical capabilities and our commitment to fill the customers' needs wrapped up in the agility of a small company can offer some exceptional values to customers. We find, oftentimes, we can provide better value and are just easier to work with," Harshaw said.

Harshaw said the company staff likes to think of themselves as providing electronics solutions for their customers.

"It's not uncommon for customers to bring us problems in unrelated areas. I think it speaks to the relationship we have with our customers, that they'll even bounce an idea off of us. While we might be mostly known for digital audio, we've had customers talk to us about lighting.



At Heads Up Technologies' facility, this electronics assembly technician performs a board inspection.



The Heads Up XM Bluetooth wireless remote control operates through low-density walls and other obstructions.

"You might wonder, 'What do lighting and digital audio have in common?' As it turns out, some of us have a background in electro-optics, which is the core discipline behind LEDs."

Harshaw said it wasn't such a big jump for Heads Up to make the transition from an audio company to a lighting company.

"Instead of looking at it as a lighting solution or creating a new form of a light, we looked at it more as creating an electronic system that happened to produce light. Because of that, I think we were able to capture some efficiencies in our design," he said.

According to Harshaw, another advantage of working with Heads Up Technologies is its ability to view new technologies before they hit the market.

"We maintain strong relationships on our supply side, making sure we understand the other companies' product roadmaps," he said. "We look for ways that those technologies might

benefit our partners on the distribution side and keep them up-to-date about what's going on. That way they don't end up hearing about something after it's out on the market.

"It's a mistake to wait and see it in the consumer market. You're already behind the power curve at that point — it's already too late," Harshaw said.

Adding Value, Looking Ahead

As for industry trends, Harshaw sees an increased focus on value as a driving force in design and manufacturing.

"Aircraft buyers are becoming increasingly value-conscious. The OEMs are striving to be the one that provides the best value," he said. "Therefore, it's a goal of our company to add as much value as possible whenever we design a product. We have to balance innovation and performance with price."

Harshaw believes OEMs are realizing the competition is really between supply chains, not between other OEMs.

"What we find interesting is learning how to view our role in the supply chain. Instead of looking at ourselves as an independent supplier, we look to see where we fit into the supply chain from a larger perspective," he said.

Harshaw said Heads Up Technologies often can provide increasing value to its OEM customers by cooperating with former competitors to build a better product, which results in more value to the owner/operator as well.

"That's really the story of XM Satellite Weather and XM Audio," he said. "We had viewed them as competitors early on. We now have repositioned ourselves as partners and are

working closely with them."

According to Harshaw, this is the type of cooperation and partnering found in the automotive industry.

"It's a business strategy that's working, but it does have some unique challenges," he said. "Not only do we have to understand the culture of the OEM, but also of the competitor. You have to change your perspective and his perspective to one of partnership rather than competitiveness. If the value is there, everyone wins."

Harshaw said improving value is going to drive the entire business.

"Even as we're seeing the demands for value going up with OEMs, and customers becoming more price-sensitive, aircraft are also becoming more feature-rich. Those two things seem to be in conflict. That's sort of the challenge of our business," Harshaw said.

"I think the only way we can get there is to continue to improve our efficiency and to become more process-oriented. That's something very easy to say and very hard to do."

Harshaw also sees unique opportunities for small businesses and a growing demand for data-link products.

"While there has certainly been a lot of consolidation with the introduction of the glass cockpit and so on in the aircraft business, I think there is still plenty of unique sensors and unique opportunities for smaller companies to build a business and grow," he said.

"We're really excited about data-link products, in particular the use of broadcast media like XM Satellite Radio to provide additional data types."

While Heads Up Technologies currently provides weather, Harshaw said there are other data types that can be

Fast Facts

- Heads Up Technologies was founded by Rob Harshaw, a former defense laser systems specialist at Texas Instruments, along with silent partners Dennis Keith, a former National Business Aviation Association executive committee and board of directors member, and Tim Doell, president of Keith Products, an aircraft cooling-and-heating systems supplier.
- The company's first passenger-briefing units were recorded in a single language. Popular with regional airlines, today's systems are capable of briefing passengers in 64 languages.
- In 2005, Heads Up Technologies produced more than 20,000 feet of LED lighting for OEMs.

sent up for new applications in the cockpit and cabin.

"You can look to some of the things that are offered now for examples, such as nav traffic data for automotive applications, webcasting, sports scores and stock tickers," he said. "Another example is the TFRs (temporary flight restrictions) that we're sending up. That's important, especially post 9/11, with airspace being more restrictive than it once was.

"As satellite radio grows in popularity in the United States, we expect the demands for state-of-the-art satellite radios will also continue. Right now, XM is sitting at a little over 6 million subscribers. As we see their subscriber base grow, I think we're going to see XM as more of a mainstay in entertainment." □

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