When it **Absolutely Must** Connect

Case Study

Using Silex's Embedded Wireless Technology to Create the First Wi-Fi-Capable Fishfinder

Case Study by Silex Technology America, Inc.

Silex Technology's Wireless Solutions Combine with the Freescale i.MX 6Solo Application Processor to Deliver the First Wi-Fi-Capable Fishfinder for the World's Largest Marine Electronics Company

Industry: Marine electronics

Application Area: Wi-Fi and Bluetooth wireless technology

The Challenge

Enabling the world's largest marine electronics company to create a marine multifunction display with capabilities that extend beyond the device's fixed position on a boat.

The Solution

Embedding Silex Technology's radio module for Wi-Fi and Bluetooth wireless connectivity into the marine multifunction display, making it possible for boaters to use their mobile devices to view whatever is on the fixed display, no matter where they happen to be on the boat.

Figure 1. With Silex Technology's 802.11b/g/n Mini-PCI Express Radio Module embedded in Lowrance's marine multifunction display, boaters are no longer tethered to the display's location on the boat .

Connecting Anglers with MFD Capabilities Anywhere on Their Boats

Whether it's on a kayak or a large sailboat, a Lowrance HDS Gen3 fishfinder/chartplotter marine multifunction display (MFD) displays all the information anglers need to locate fish as they navigate through the water. And thanks to embedded Wi-Fi and Bluetooth capabilities from Silex Technology, they can see the information even when they're nowhere near the screen display.

The Silex Technology radio module that Lowrance built into the MFD enables communication between the MFD and a variety of wireless devices. As a result, a user can see on their phone or tablet whatever's being displayed on the MFD. It's an indispensable marine electronics solution for larger boats, providing access to images on the display to everyone on the boat, including those fishing off the bow or in another area away from the MFD.

Building in Multiple Integration and Connectivity Options

Powered by the Freescale i.MX 6Solo applications processor, the HDS Gen3 MFD delivers striking on-screen visual detail and a remarkably rapid response to user commands. It's the first Wi-Fi-capable display to include an open SDK for mobile-device interaction, provide Bluetooth LE compatibility and enable users to download data from the Internet.

With the Silex Wi-Fi-equipped MFD, boaters can do much more than view and operate the MFD from different places on a boat. They can also:

- Connect with third-party navigation apps on the user's smartphone or tablet to share GPS position, depth, course, speed and other data with the MFD.
- Conveniently download software upgrades and map data, or upload navigation and sonar information, at any Wi-Fi-equipped location such as a marina hotspot.
- Deploy Bluetooth-equipped PowerPole anchors in shallow water without ever leaving the helm of the boat.

Lowrance continues to come up with new ways to take advantage of the connectivity the Wi-Fi-equipped MFD provides. Plans include providing the ability to control wireless audio players, interact with wearable devices and connect to low-power battery-operated remote controls, instruments and sensors.

Ensuring Compliance with a Pre-Certified Radio Module

With its decision to include a Wi-Fi capability in HDS Gen3, Lowrance became subject to laws that govern radio transmissions. This is because any electronics solution that includes a radio transmitter component like the embedded Silex module must comply with government regulations designed to prevent electronics from causing radio interference problems. Compliance can be complex and costly, mandating the manufacturer's documented adherence to a variety of regulatory requirements.

Fortunately, Silex Technology's Wi-Fi/Bluetooth module is pre-certified for compliance with regulatory requirements for radio transmitters. By choosing this certified module to embed in its MFD, Lowrance avoided the complexity and expense of establishing and documenting compliance.

> ***"We did a thorough search of wireless modules available in the market. I found Silex to be responsive and helpful in guiding us through the integration and certification process. This was our first implementation of a Wi-Fi/Bluetooth product, and it was useful to have Silex take care of modular certification for us."***
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> ***- Andrew Corbett, Chief Technical Officer, Navico Asia Pacific***

Delivering Superior Support for a Superior Product

With its "Find. Navigate. Dominate" promise to anglers, Lowrance is committed to leading the way in marine electronics. Its HDS Gen3 takes a revolutionary step forward with a solution that goes well beyond finding fish. Silex Technology supports this innovation by providing a key component for expanding and extending the possibilities of MFD technology.

About Navico

Navico is currently the world's largest marine electronics company, and is the parent company to leading marine electronics brands: Lowrance, Simrad and B&G. Navico has approximately 1,500 employees globally and distribution in more than 100 countries worldwide.

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