TECHNICAL ARTICLE
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Anders Discusses – What Advantages do HDMI Displays Offer Embedded Projects?

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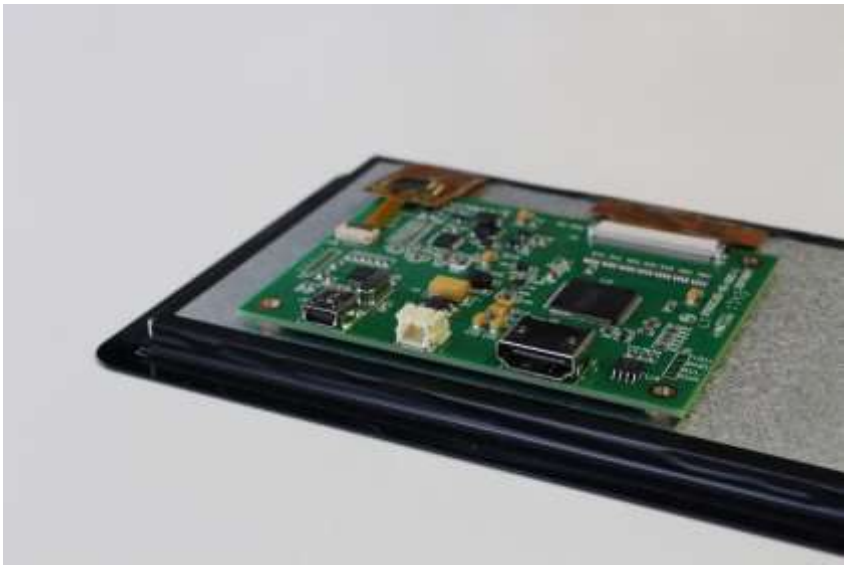


HDMI displays are available in small sizes such as 5-inch or 7-inch, which are popular for industrial embedded use cases such as smart appliances, security devices, ticketing and information systems, medical devices, machine controllers, and many others.

Are HDMI Panels Plug and Play?

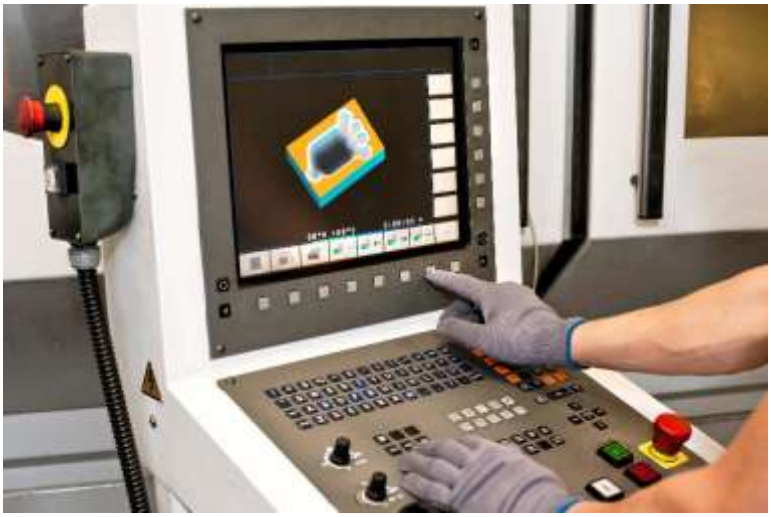
One advantage of the HDMI interface is that the display can be regarded as a "plug and play" component. In the middle of a development project, one display can be easily swapped for another to try a different size or a better specification. Plug and play can help teams to start work on the user interface without committing to a hardware platform or waiting until a prototype is ready. That can be very helpful when the time comes to demonstrate a proof of concept in order to secure a green light from top management.

We have a selection of HDMI displays that make rapid prototyping even easier by providing a Mini-USB port to easily connect the touchscreen to any of the large number of single-board computers that provide a USB connection.

Getting a head-start on the user-interface design, while also having the flexibility to make changes, can be a tremendous advantage to the project, particularly when achieving the right look and feel is critical to the overall user experience.

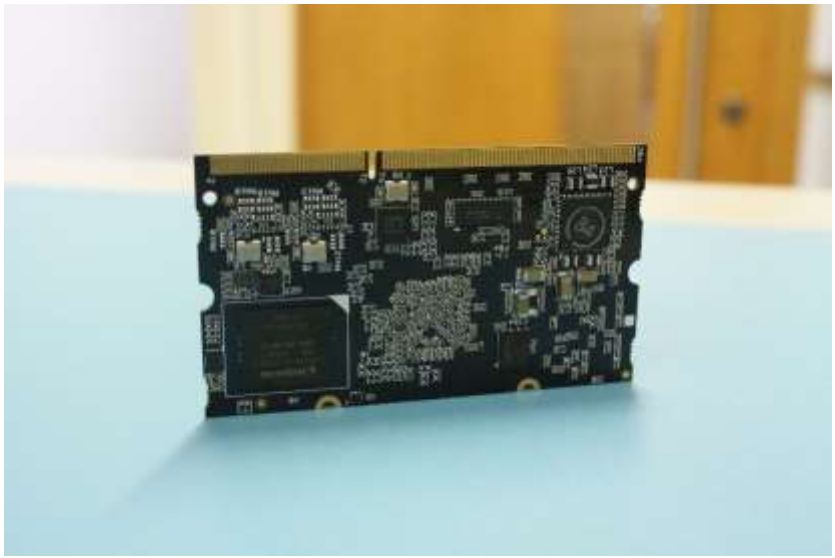
However, HDMI was not created as an embedded user interface. With its roots in the consumer world it is relatively expensive due to license fees that can raise the price of the delivered product. The power and board real estate consumed by HDMI interface circuitry also need to be considered.

Are HDMI Panels Suitable for Industrial Applications



Despite these apparent drawbacks, embedded projects can take advantage of the fast start, plug-and-play simplicity, and the flexibility to make design changes quickly and easily, which HDMI displays can provide. Our LVDS to HDMI interface converter can connect an embedded board to an HDMI display to let user-interface development begin before committing to any particular hardware platform. This can be an effective approach for rapid prototyping.

Later in the project, when the display size and specification are known, the HDMI interface board can be easily dropped in favour of a lower-cost, or lower-power embedded RGB or LVDS interface. The option remains to use the HDMI display in the end product, either with the interface board or by integrating the conversion circuitry on the application main board. It's fast and easy, if rather expensive and power hungry.



On the other hand, high-performance evaluation modules such as the Compulab SOM-iMX8 are ideal for equipment that demands high graphics or image-processing performance - such as medical imaging devices or high-end gaming terminals -- and come with an HDMI interface on-board. Our own in-house tests have shown that these boards offer easy plug-and-play compatibility with a variety of different HDMI displays.

How Can I Connect my Chosen Display?

Various other high-performance display interfaces have strong credentials for emerging embedded use cases. MIPI-DSI is an example, which is being adopted in the automotive industry as well as AR/VR equipment and wearable electronics. An embedded board with a MIPI-DSI output may require conversion to RGB or LVDS to connect a chosen display.

Conversely, some developers may want to connect a MIPI display to a module that has an ordinary RGB or LVDS output. We can handle almost permutations using our wide selection of interface boards, to help quickly achieve a working model that may either be used directly in the final product or adapted to satisfy other constraints such as cost or power consumption.

Small displays that feature high-performance interfaces provide new flexibilities for embedded projects. Our expertise helps navigate the possible opportunities to ensure the finished product meets the applicable cost, size, and power requirements within the desired time-to-market window.

About Anders

Anders Electronics plc. is a display and embedded display design specialist, dedicated to making electronic touchscreen technology safer, simpler and more enjoyable to use.

Over 30 years ago, Anders started designing, developing, and delivering customised display solutions, for the non-consumer industry, and haven't stopped innovating since! Anders features a history of reliability and innovation and lives to solve display engineering challenges.

Anders harnesses their expertise in display, embedded computing and touch control technology to help differentiate their customer's products through exceptional design and engineering.

Anders, the people behind the screen.

You can watch this article video interview here: https://www.youtube.com/watch?v=0G-jEDtG3P8

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