GOWIN Semiconductor Corp., the world's fastest-growing programmable logic company, announces the release of their HDMI/DVI RX and TX IPs in GOWIN EDA's IP Generator providing low cost video interfacing and connectivity solutions for various embedded applications.

HDMI and DVI is one the most common video interfaces used today. With advancements and performance improvements in semiconductor devices, many solutions have focused on higher data rates for both resolution and frame rate improvements. This has left a significant gap for solutions that don't need extremely high resolutions or frame rates and are very sensitive to their final end product cost.

As a result, GOWIN has developed HDMI and DVI IPs for both receiving and transmitting video data to target resolutions more common to embedded equipment such as 1080p30 or 1280x800p60. These solutions provide a much lower over all solution cost when compared to ASIC bridges or SoCs that often contain more advanced features than what the end product actually requires.
GOWIN's HDMI/DVI IP's have been seen in a broad range of consumer, industrial, and automotive applications. In some cases, the IP's are used in low density GOWIN FPGA's for video bridging from one video interface to another. For example, many industrial and consumer kiosks have an HDMI input which drives a Single-Link or Dual-Link LVDS display directly. As a result, GOWIN has created a reference design specifically for this bridging application, which can scale to FPGAs as small as the GOWIN LittleBee GW1N-1, 1K LUT FPGA. Other display interfaces such as MIPI DSI and DPI can also be targeted.

In other situations, the GOWIN HDMI/DVI IP is used with a larger GOWIN FPGAs to create a custom system-on-chip that includes HDMI interfacing. In these situations, devices can utilize video streams HDMI inputs and outputs to perform graphics and video processing.

Specialty devices such as the GOWIN GW2AR18 can provide internal frame buffers using its extended 8MB PSRAM making it great for developing custom video SoCs.

The GOWIN HDMI RX IP was demonstrated as part of a HDMI to LVDS display solution recently at Embedded World 2020. GOWIN's HDMI TX IP was also demonstrated as part of their GoAI artificial intelligence solution. These demos showed video processing of HDMI data using GOWIN FPGAs at resolutions of 1280x800p60 and 1920x1080p30 respectively.