General description
V-by-One® HS is a de-facto standard interface in high-end TV market. It solves conventional LVDS interface problems. Numerous applications can benefit from implementing V-by-One® HS interface.

Product lineup

### V-by-One® HS Transmitter

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Output Interface</th>
<th>Color Depth</th>
<th>PLL Clock Frequency [MHz]</th>
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<tbody>
<tr>
<td>THCV226</td>
<td>CMOS/TTL</td>
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<td>THCV234</td>
<td>V-by-One® HS</td>
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<td>THCV216</td>
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### V-by-One® HS Receiver

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**V-by-One® HS** is a de-facto standard interface in high-end TV market. It solves conventional LVDS interface problems. Numerous applications can benefit from implementing V-by-One® HS interface.
Industry-Leading Versatile Interface V-by-One®HS

V-by-One®HS was originally developed for Flat Panel Displays (FPD) which have many technical challenges. THine is the only company that overcame these problems / requirements such as:

- Real time image data transmission
- Availability for higher frame rate, higher resolution
- Adaptation to various different pixel rates
- Register controlling issue
- Easier skew handling by CDR
- Lower EMI
- Longer and cheaper cables
- Reduction of total cost including cables and connectors

THine’s V-by-One®HS offers flexibility with speed adaptability from 600Mbps to 4.0Gbps and is available as an open standard that can be licensed online. The combination of these two items have made it possible for V-by-One®HS to be adapted in many interface applications.

### ADVANTAGES

- Free from skew problem
- Multiple Link Available
- No Software/Register Control
- Low EMI
- Varied Cable Options
- Longer Cable Length Possible
- High Speed (4Gbps/pair)

### APPLICATIONS

- TV (FPD)
- Multi Function Printer
- Gaming
- Automotive
- Security Camera
- etc.

What’s Next??

THine has shipped more than 50 million V-by-One® chips.

![THine Has Shipped More than 50 Million V-by-One® Chips](image)

**NEW PRODUCT**

V-by-One®HS for Automotive

V-by-One®HS products supporting up to 1080p (Full-HD) 60fps via 1 pair and AEC Q100 Qualified.

- Wide Frequency Range: 6~160MHz
- Single and WideRange Supply Voltage: 1.7~3.6V
- No Frequency Reference is required due to CDR
- Additional Serial Interface Bridge Function

![V-by-One®HS for Automotive](image)

Long Distance V-by-One®HS is Market Proven

[Product is Now on Sale] The ability of V-by-One®HS to transmit high resolution video image in long distance allows those images captured by a Rearview Camera 7m apart from the main board to be adapted in many interface applications.

- Cable Length: 7m/23ft
- Resolution: 720p/Rearview, 1080p/Forward view
- Low EMI/CDR Technology

Followed by Related Technologies, such as LVDS, TCON, and Surround View Monitoring

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- No Frequency Reference is required due to CDR
- 2-Wire Serial Interface Bridge Function
- Additional Spread Spectrum Clock Generation (SSCG) on Data Stream
- AEC-Q100 Qualified

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News Release

Samsung Selects THine’s V-by-One®HS as the Next Generation Interface for High-End LCD Panels


LG Electronics Selects THine’s V-by-One®HS as the Next Generation Interface for DTV

News Release, THine Electronics, Inc. Nov. 2011

THine’s low-power 4000 Mbps transmitters selected by NVIDIA for Tegra 3 platform

News Release, THine Electronics, Inc. Nov. 2011

THine licenses Qualcomm Technologies Inc. V-by-One®HS Technology


THine’s V-by-One®HS brings NVIDIA’s G-SYNC™ Technology to 4K Displays


News Release, LG Electronics, Inc. & THine Electronics, Inc. 2011

News Release, LG Electronics, Inc. 2008

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<td>TQFP128</td>
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<td>THCV220</td>
<td>-40 to +85</td>
<td>CMOS/TTL</td>
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<td>-40 to +105</td>
<td>CMOS/TTL</td>
<td>0.87 to 3.3</td>
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**THine V-by-One® HS Flier Rev211_E**

August, 11, 2015  
THine Electronics, Inc.