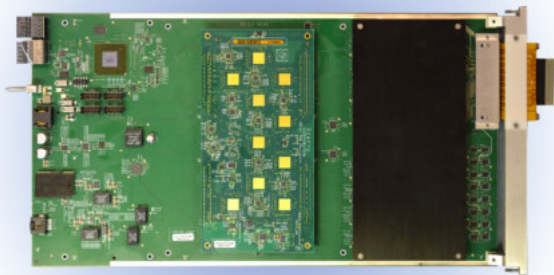


DIAMOND_x SERIES HSI_{2x}



High Speed Solution for SerDes / LVDS / MIPI
Interfaces

Highlights:

- Physical layer testing with built in PRBS BERT TX/RX
- BIST/DFT testing using high bandwidth drive/compare memory
- Protocol level and mixed-signal testing using deep send pattern memory

Features:

- Test of high-speed serial ports with data rates up to 12.8 Gbps, such as HDMI, MIPI, JESD204, PCIeexpress, SATA, EDP, Vby1 and USB3
- 32 differential TX channels
- 24 differential RX channels
- Hardware clock data recovery per lane with flexible BERT sync
- Deep source memory
- Flexible loopback modes including closed loop BERT
- Calibrated jitter injection on all lanes
- Flexible pre-emphasis and equalization

The HSI_{2x} is optimized for testing clock-embedded and clock-forwarded serial interfaces commonly found in modern mobile, consumer, industrial and automotive electronics.

These ports connect modems, cameras, displays, storage and applications processors to enable high bandwidth, low power consumption, and low EMI.

DIAMOND_x SERIES HSI_{2x}

1. Data Rate

- Data rate range 400 Mbps to 12.8 Gbps
- Frequency resolution 1 KHz

2. Transmitter

- Number of differential TX channels 32
- AC output differential impedance 100 Ω
- Differential voltage swing 40 mV to 950 mV
- Pre-emphasis range +/- 300 mV (Typical)
- DC Common Mode Range 0 V to 1.2 V
- Jitter frequency range 0.1 KHz to 20 MHz
- Max injected deterministic jitter, peak-peak 1.4 ns
- Maximum RMS random jitter injection 0.1 UI

3. Receivers

- Number of differential RX channels 24
- AC input differential impedance 100 Ω
- Input differential voltage range 25 mV to 1.4 V
- Input single ended range 360 mV to 1070 mV
- Programmable comparator threshold voltage +/- 0.5 V
- Extracted clock domains 2
- Equalization gain 1 to 2.4

4. Pattern Specifications

- Built in patterns K28.5, PRBS 5, 7, 9, 11, 13, 15, 21, 23, 31 and invert, toggle, all ones, all zeros
- Pattern segment size 512 bits – 64 Kbits
- Total memory space for TX 8 Gb
- Total memory space for RX 2 Mb
- Sequence control Loop infinite, Loop on count, Play to end
- Maximum loop count per sequencer slot 2**16 - 1
- Triggering External or internal

5. PMU Specifications

- Current ratings 4 uA, 40 uA, 400 uA, 25 mA
- Measure voltage range -1 V to +3.5 V

All specifications are subject to change without notice.

