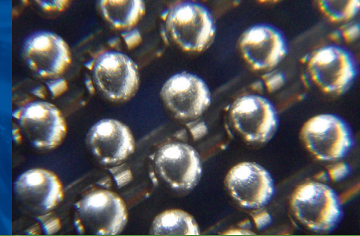
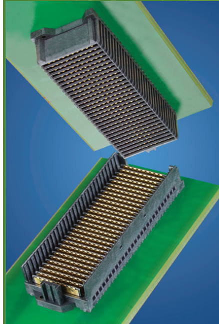


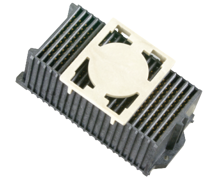
NeXLev®

High-Density Parallel Board Connector

- 57 usable signals per linear centimeter (145 signals per inch)
- Capable of data rates up to 12.5 Gbps
- Robust, damage-resistant design
- Ball grid attachment using standard SMT process
- Range of stacking heights 10-33mm
- RoHS compliant



NeXLev means more flexibility and a better way to think about PCB design. Amphenol's NeXLev parallel board connector makes it easy to achieve these goals, with:



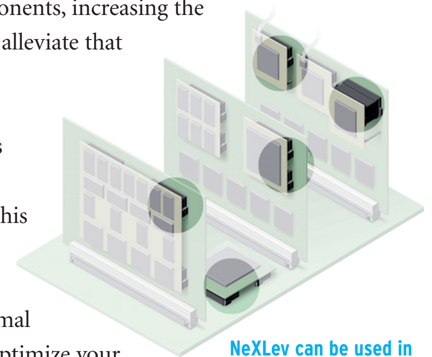
200 position 7,5mm receptacle with vacuum pick-up cap

- **Flexibility** — Partition your system in different ways, optimize performance and manufacturability.
- **Performance** — Data rates of up to 12.5 Gbps.
- **High-density** — Up to 57 real signals per linear centimeter (145 signals per linear inch).
- **Reliability** — Rugged wafer construction and a compliant BGA-style attachment.

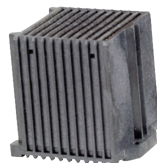
Flexibility

Today's daughtercards can contain thousands of components, increasing the potential for low production yields. NeXLev helps you alleviate that risk by reducing the overall complexity of your cards.

Using NeXLev, you can relocate high pin count devices onto a mezzanine or module card to simplify board routing without compromising system performance. This creates islands of high density for scalable processing, memory modules, or interfacing I/O cabling modules. Placing these high-density, high thermal mass devices on a module also allows you to optimize your surface mount processes, resulting in improved yields, and reduced cost.



NeXLev can be used in a range of parallel and mezzanine applications



100 position 23,5mm receptacle

NeXLev not only improves the design of new systems, it can be used to upgrade existing systems. Use it to plug in new high-featured mezzanine cards to an existing system or add more processors or memory in the form of module cards.

Optimal System Performance

Capable of handling data rates up to 12.5 Gbps, NeXLev is the solution to meet increasing bandwidth demands in mezzanine applications. NeXLev can be used in heights from 10mm to 33mm without compromising performance because shielding is provided by the connector's stripline construction. The wafers can be routed to support either single-ended or differential-paired architectures.

	2,5	4,5	6,5	9,5
7,5	10	12	14	17
10,5	13	15	17	20
15,5	18	20	22	25
20,5	23	25	27	30
23,5	26	28	30	33

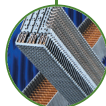
NeXLev is available in mated heights from 10-33mm; offered in 100, 200, and 300 position modules.

The Amphenol TCS Advantage

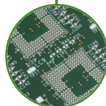
"By offering design solutions and advice related to signal integrity between the chip, the design of the PCB, and finally, the connector, Amphenol TCS has the total signal path covered. This type of system solution approach provides an advantage over connector-only manufacturers."

- Fleck Research

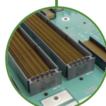
Industry Leading Connectors



Printed Circuit Backplanes



Integrated Backplane Systems



Design and Applications Solutions

Amphenol TCS

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In the **single-ended configuration**, NeXLev provides up to 57 usable signals per linear centimeter (145 per linear inch). In this configuration NeXLev can operate up to 200 picoseconds (20-80%) with less than 5% multi-line crosstalk and less than 5% reflection across the full range of heights from 10-33mm. Signal performance can be further increased with the additional grounding of signal pins.

- Less than 3% multi-line crosstalk at a rise time of 100 picoseconds (20-80%) can be achieved when using a staggered 1:1 grounding of the signals, changing the effective density of the connector to 28.5 signals per linear centimeter (73 signals per linear inch).
- Achieve less than 2% multi-line crosstalk at a rise time of 100 picoseconds (20-80%) by grounding the outer rows of signals, changing the effective density of the connector to 23 signals per linear centimeter (58 signals per linear inch).

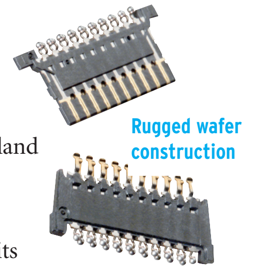
In the **differential configuration,** NeXLev provides up to 29 real signal pairs per linear centimeter (73 pairs per linear inch). In this configuration NeXLev operates at a rise time of 100 picoseconds (20-80%) with less than 5% multi-line crosstalk and 5% reflections across the full range of stacking heights.

- Achieve enhanced performance at a rise time of 50 picoseconds (20-80%) with less than 5% multi-line crosstalk by modifying the ground pattern to three differential pairs per wafer (G-S-S-G-S-S-G-S-S-G). This changes the effective density of the connector to 17 pairs per centimeter (44 pairs per inch).

Reliability

NeXLev uniquely applies BGA attachment technology, widely accepted for its high reliability, making it robust both during manufacturing and in the field.

Designed with solder joint reliability in mind, the connector employs a compliant structure for attachment to the printed circuit board. NeXLev is readily applied using standard SMTprocesses to ensure high reliability and high process yields during surface-mount assembly.



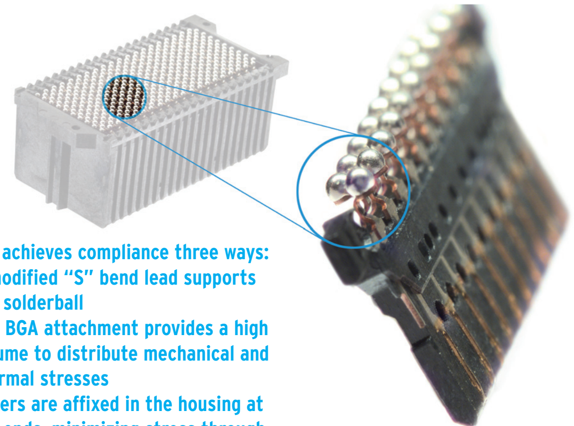
Rugged wafer construction

NeXLev utilizes the self-centering nature of the ball grid array interface to ensure precise alignment of the connector to the land pattern on the board.

NeXLev is designed for robustness. With its wafer construction, the connector has no freestanding pins to damage during mating or during in-circuit test.

Power Rating

NeXLev can handle 1.0 Amps/contact. Power can be run through both the signal contact and shield side of the wafer.



NeXLev achieves compliance three ways:
- A modified "S" bend lead supports the solderball
- The BGA attachment provides a high volume to distribute mechanical and thermal stresses
- Wafers are affixed in the housing at the ends, minimizing stress through the connector

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