

CLAIMS

1. A modular inkjet printhead comprising a plurality of printhead modules arranged end on end in a row, each printhead module comprising:
 - 5 a substrate having a plurality of parallel ink supply channels extending longitudinally along a length thereof; and
 - a plurality of parallel printhead segments, each printhead segment extending longitudinally along a length of the substrate and comprising a plurality of print chips arranged end on end in a row, each print chip in one row receiving ink from a respective one
 - 10 of the ink supply channels, and each print chip comprising a plurality of nozzle rows configured for redundant printing,
 - wherein:
 - a plurality of fingers extend longitudinally from opposite ends of each printhead module;
 - 15 each finger comprises a portion of a respective one of the printhead segments; and
 - the fingers of neighboring printhead modules are interdigitated such that printhead segments of neighboring printhead modules overlap.
2. The modular inkjet printhead of claim 1, wherein all printhead modules are identical.
- 20 3. The modular inkjet printhead of claim 1, wherein each printhead module is oriented in a same direction with respect to a media feed direction.
4. The modular inkjet printhead of claim 1, wherein alternate printhead modules are
- 25 oriented in an opposite direction with respect to a media feed direction.
5. The modular inkjet printhead of claim 4, wherein the portion of each printhead segment contained in a respective finger is positioned towards one lateral edge of the finger.
- 30 6. The modular inkjet printhead of claim 1, wherein each printhead module comprises at least four printhead segments.
7. The modular inkjet printhead of claim 1, wherein a print zone of the printhead is less than 100 mm.

8. The modular inkjet printhead of claim 1, wherein a number of fingers is twice a number of printhead segments.
- 5 9. The modular inkjet printhead of claim 1, wherein each substrate has opposite first and second faces, the first face having one or more first PCBs mounted thereon and the second face having one or more second PCBs mounted thereon.
- 10 10. The modular inkjet printhead of claim 9, wherein the first and second PCBs are generally perpendicular to each other.
11. The modular inkjet printhead of claim 9, wherein the first and second PCBs are connected via electrical connectors extending through longitudinal slots defined in the substrate.
- 15 12. The modular inkjet printhead of claim 11, wherein each pair of neighboring ink supply channels has one of said longitudinal slots positioned therebetween.
- 20 13. The modular inkjet printhead of claim 12, wherein each ink supply channel has a base defining a plurality of ink outlets and a roof comprising an elongate flexible film, and wherein each print chip receives ink from one or more of the ink outlets.
- 25 14. The modular inkjet printhead of claim 9, wherein each second PCB comprises one or more external connectors selected from the group consisting of: a power connector and a data connector.
15. The modular inkjet printhead of claim 1, wherein each ink supply channel has an ink port at opposite ends thereof, the ink port extending away from the substrate.
- 30 16. The modular inkjet printhead of claim 15, wherein corresponding adjacent ink ports of neighboring printhead modules are interconnected.

17. The modular inkjet printhead of claim 16, wherein the ink ports are connected to respective inlet and outlet channels of a common ink carrier extending a length of the printhead.

5 18. A printhead module for a modular inkjet printhead having a plurality of said printhead modules, the printhead module comprising:

a substrate having a plurality of parallel ink supply channels extending longitudinally along a length thereof;

10 a plurality of parallel printhead segments extending longitudinally along a length of the substrate, each printhead segment comprising a plurality of print chips arranged end on end in a row, each print chip in one row receiving ink from a respective one of the ink supply channels, and each print chip comprising a plurality of nozzle rows configured for monochrome printing,

wherein:

15 a plurality of fingers extend longitudinally from opposite ends of the printhead module;

each finger comprises a portion of a respective one of the printhead segments; and

20 each finger is configured such that fingers of neighboring printhead modules are interdigitated, thereby enabling printhead segments of neighboring printhead modules to overlap.

19. The printhead module of claim 18, wherein each substrate has opposite first and second faces, the first face having one or more first PCBs mounted thereon and the second face having one or more second PCBs mounted thereon.

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20. The printhead module of claim 19, wherein the first and second PCBs are connected via electrical connectors extending through longitudinal slots defined in the substrate.