

Supplementary Material (ESI) for Lab on a Chip

3D printed high density, reversible, chip-to-chip microfluidic interconnects

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Video. Video S1 shows a 45 valve array actuated sequentially row-by-row with a 50 ms scrolling action in which each row of valves is actuated 100 ms. The valves are 300 μm in diameter. To individually control 9 rows of valves and individually connect fluid to each of the 5 columns, $2 \times 9 + 2 \times 5 = 28$ CCIM connections are made to an interface chip with 28 matching PTFE tubes. The interface and valve array chips are clamped together such that the CCIMs seal around corresponding holes in the interface chip in a manner similar to Fig. 2 in the main text, except the 28 CCIMs are spatially dispersed around the edges of the 45 valve array.