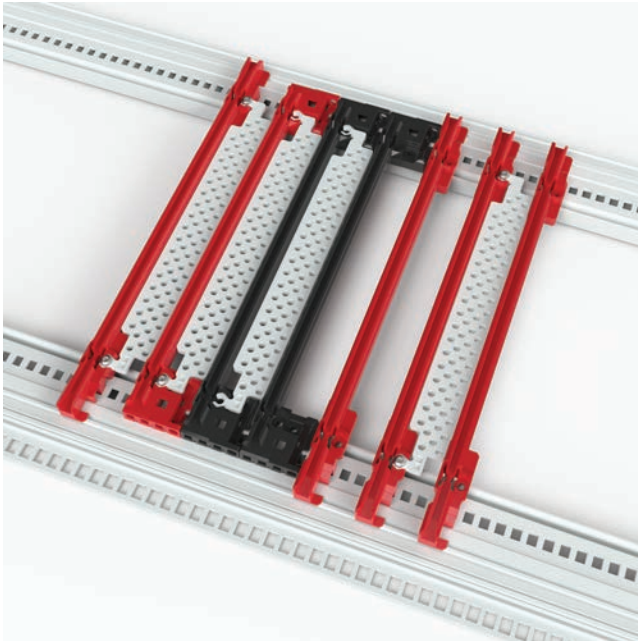


AirBender Inlay



The **nVent SCHROFF AirBender Inlay** is a cooling accessory designed to enhance airflow and cooling efficiency in electronic systems. It effectively addresses the challenge of mixed air impedances in system setups, such as densely packed FPGA cards with heatsinks and peripheral cards with low air impedance. This imbalance often results in excessive airflow to less critical components and insufficient cooling for vulnerable cards.

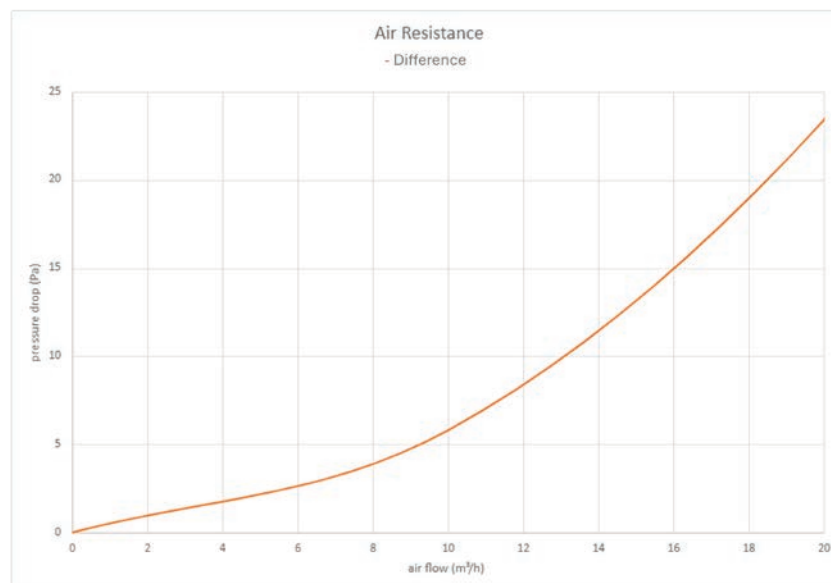
By introducing additional air impedance with the AirBender, this misbalance is optimized, ensuring better cooling outcomes for all cards. Made from a halogen free, UL94-V0 and EN 45545-2 compliant Polycarbonate, the AirBender Inlay is a single-piece component that is easily assembled into an system slot by inserting in the card guide and optionally securing it with screws.

Product Benefits

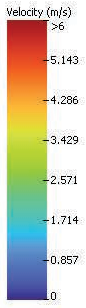
- **Easy installation!** No change in Hardware Setup needed
- **Optimizing Airflow** by redirecting to vulnerable zones
- **Enhances System cooling** by balancing the flow
- **Noise Reduction** due to efficient Fan operation point
- **Optimized Air Derivation** among Periphery Slots
- Low Cost & Design-In effort but **high system impact!**

General Capabilities	
Assembly	Insertion & front screwed to rail
Usage	Fits with most nVent SCHROFF card guides
Perforation	70% median blockage
Material	Polycarbonate, UL94-V0 and EN 45545-2 compliant

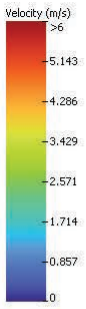
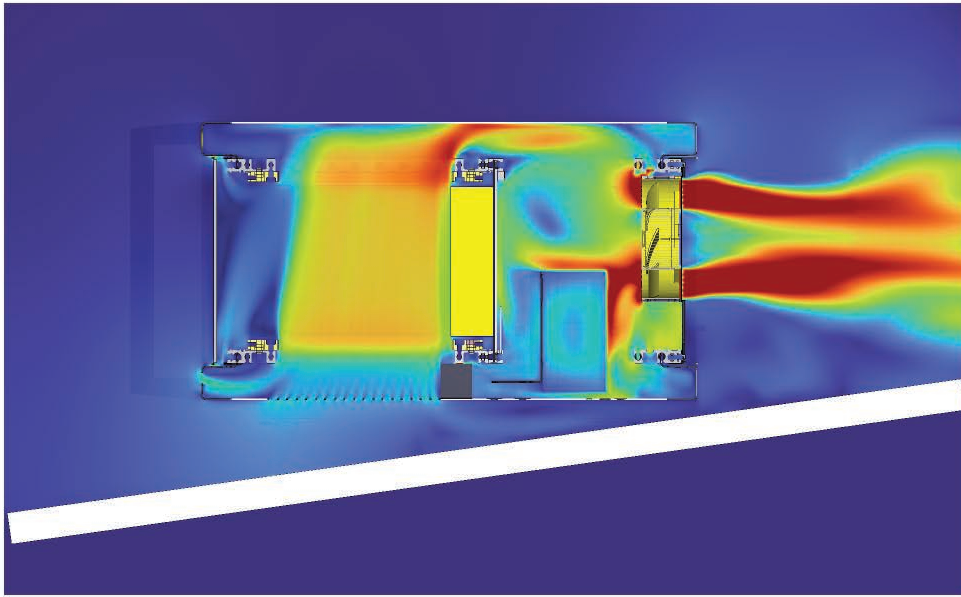
Mechanical Parameters	
Form Factor	4HP (W), 160 mm (D)
Dimensions	3,0 × 15,0 × 124,5 / 184,0 mm (HxWxD)



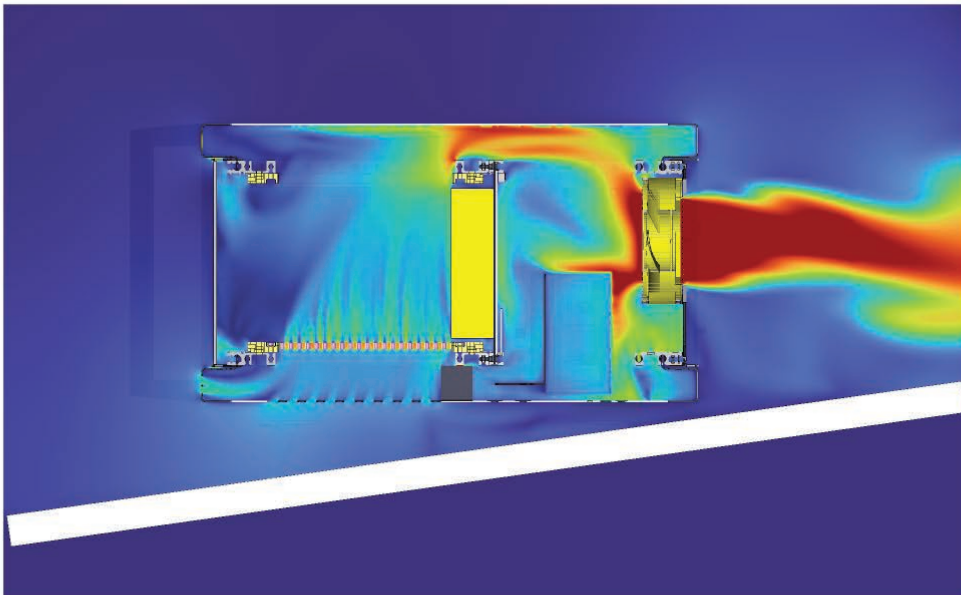
Order Information	Order Number
AIRBENDER CARD GUIDE INSERTS, 70% BLOCKAGE, 4HP 160 MM, 10 PC KIT	24563-040



Peripheral Card with 10% component density - non-optimized



Peripheral Card with 10% component density - with nVent SCHROFF AirBender Usage



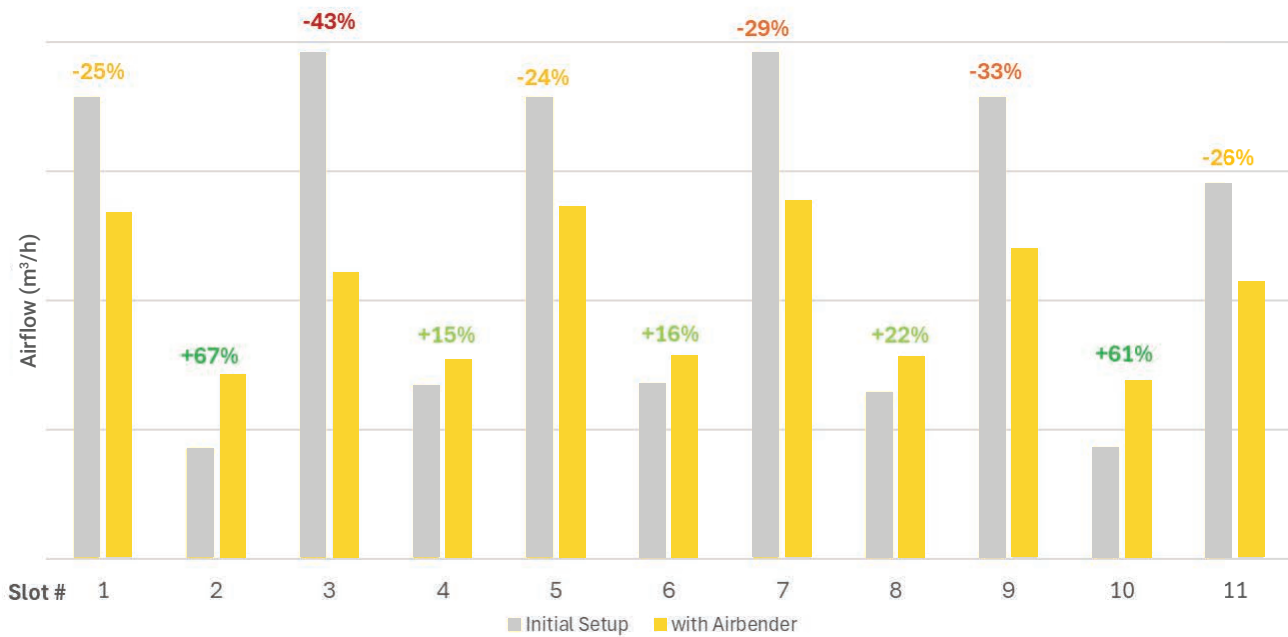
ALTERNATING AIR IMPEDANCE APPLICATION EXAMPLE

Initial Hardware Setup

Slot #	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7	Slot 8	Slot 9	Slot 10	Slot 11
Applied Device / Obstruction	10% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card
Open Bottom Perforation											

Optimized Hardware Setup with AirBender Inlay in Low Air Impedant Slots

Slot #	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7	Slot 8	Slot 9	Slot 10	Slot 11
Applied Device / Obstruction	10% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card
	AB70		AB70		AB70		AB70		AB70		AB70
Open Bottom Perforation											



Slot #	Initial Setup		With Airbender		Improvement		
	m³/h	W*	m³/h	W*	Δm³/h	ΔW*	%
Slot 1	17,88	81,27	13,40	60,90	-4,48	-20,37	-25%
Slot 2	4,27	19,39	7,14	32,45	+2,87	+13,06	+67%
Slot 3	19,56	88,91	11,09	50,40	-8,47	-38,51	-43%
Slot 4	6,73	30,58	7,73	35,15	+1,00	+4,57	+15%
Slot 5	17,88	81,27	13,65	62,05	-4,23	-19,22	-24%
Slot 6	6,79	30,88	7,86	35,74	+1,07	+4,86	+16%
Slot 7	19,56	88,91	13,87	63,05	-5,69	-25,86	-29%
Slot 8	6,44	29,26	7,83	35,59	+1,39	+6,33	+22%
Slot 9	17,88	81,27	12,00	54,55	-5,88	-26,73	-33%
Slot 10	4,30	19,54	6,90	31,37	+2,60	+11,83	+61%
Slot 11	14,52	66,00	10,72	48,73	-3,80	-17,27	-26%
TOTAL	135,80	617,29	112,19	509,97	-23,61	-107,31	-17%

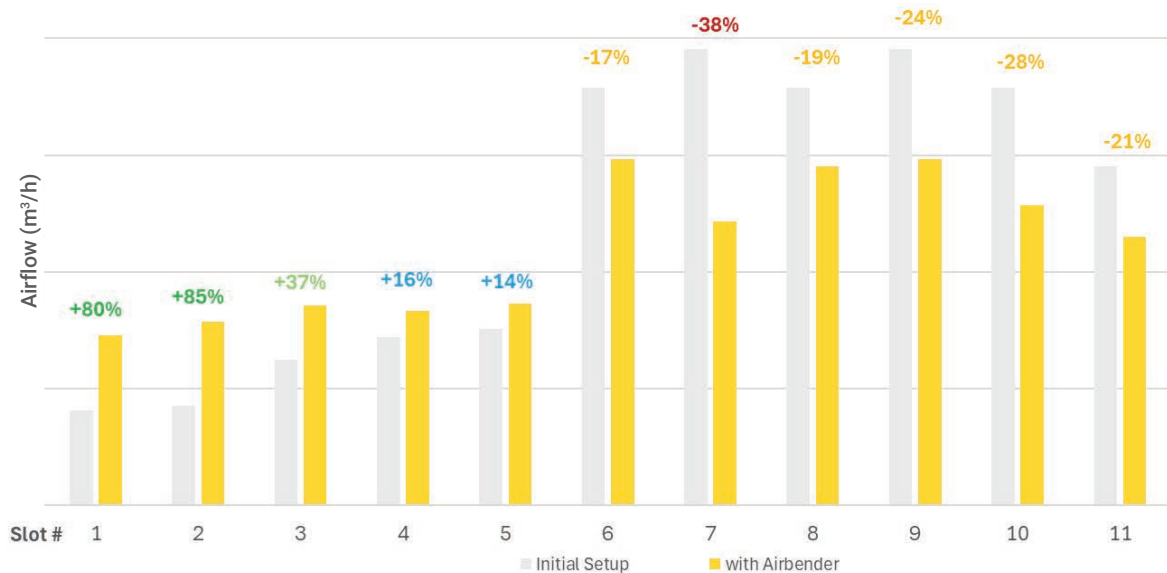
GROUPED AIR IMPEDANCE APPLICATION EXAMPLE

Initial Hardware Setup

Slot #	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7	Slot 8	Slot 9	Slot 10	Slot 11
Applied Device / Obstruction	80% Impedance Test Paddle Card	80% Impedance Test Paddle Card	80% Impedance Test Paddle Card	80% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card	10% Impedance Test Paddle Card	10% Impedance Test Paddle Card	10% Impedance Test Paddle Card	10% Impedance Test Paddle Card	10% Impedance Test Paddle Card
Open Bottom Perforation											

Optimized Hardware Setup with Air Inlet Cards

Slot #	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5	Slot 6	Slot 7	Slot 8	Slot 9	Slot 10	Slot 11
Applied Device / Obstruction	80% Impedance Test Paddle Card	80% Impedance Test Paddle Card	80% Impedance Test Paddle Card	80% Impedance Test Paddle Card	80% Impedance Test Paddle Card	10% Impedance Test Paddle Card	10% Impedance Test Paddle Card	10% Impedance Test Paddle Card	10% Impedance Test Paddle Card	10% Impedance Test Paddle Card	10% Impedance Test Paddle Card
						AB70	AB70	AB70	AB70	AB70	AB70
Open Bottom Perforation											



Slot #	Initial Setup		With Airbender		Improvement		
	m³/h	W*	m³/h	W*	Δm³/h	ΔW*	%
Slot 1	4,05	18,41	7,29	33,14	+3,24	+14,73	+80%
Slot 2	4,26	19,34	7,85	35,69	+3,60	+16,35	+85%
Slot 3	6,24	28,37	8,55	38,88	+2,31	+10,51	+37%
Slot 4	7,20	32,74	8,34	37,90	+1,13	+5,15	+16%
Slot 5	7,56	34,36	8,63	39,22	+1,07	+4,86	+14%
Slot 6	17,88	81,27	14,83	67,39	-3,05	-13,88	-17%
Slot 7	19,56	88,91	12,14	55,20	-7,42	-33,71	-38%
Slot 8	17,88	81,27	14,53	66,05	-3,35	-15,22	-19%
Slot 9	19,56	88,91	14,83	67,41	-4,73	-21,50	-24%
Slot 10	17,88	81,27	12,86	58,47	-5,02	-22,80	-28%
Slot 11	14,52	66,00	11,49	52,22	-3,03	-13,78	-21%
TOTAL	136,59	620,87	121,35	551,57	-15,25	-69,30	-11%



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