Ordering Information:
XSoptix
800 Village Walk #316
Guilford, CT 06437
Ph: 203-401-8093
Email orders to: sales@xsoptix.com
Fax orders to: 800-878-7282

nicslab

1000+ CHANNELS

(900+ VOLTAGE CONTROL
100+ CURRENT CONTROL)

DIMENSION

Length x Width x Height

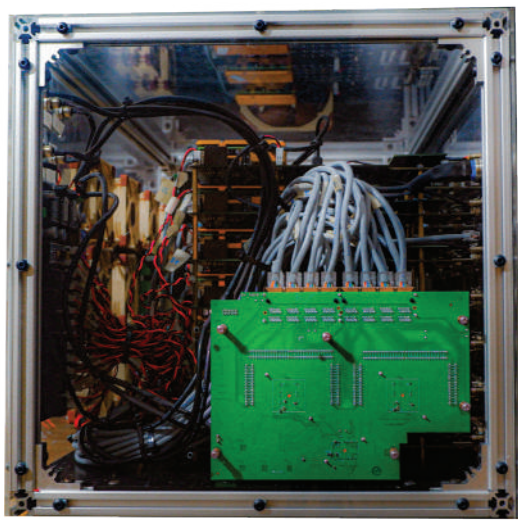
70cm x 40cm x 40cm

WEIGHT 25 KG

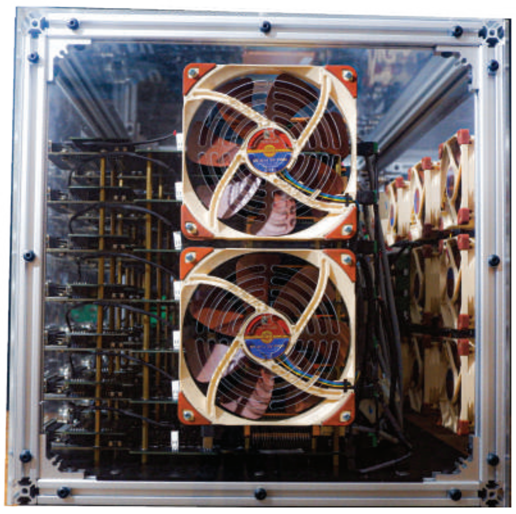
VOLTAGE & CURRENT

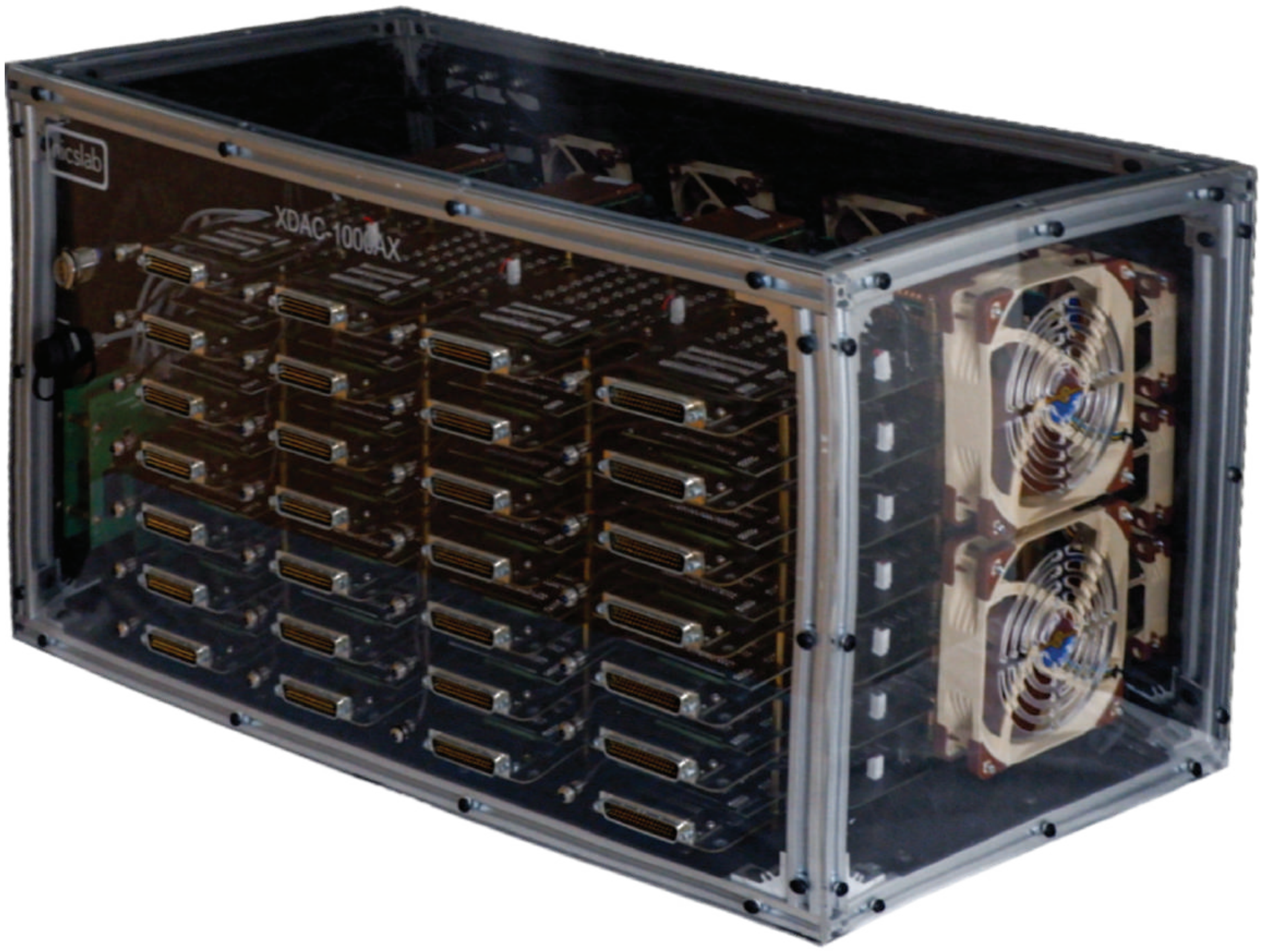
INPUT STANDBY : **36V /4.5A**
(5 PSU USED)
(MINIMAL **30V / 0.9A** / PSU)

LEFT SIDE

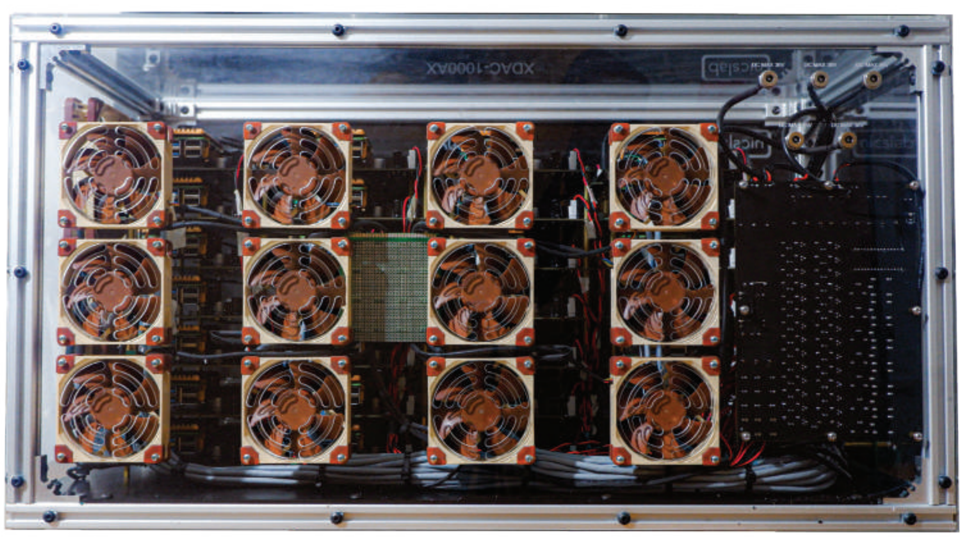


RIGHT SIDE





BACK SIDE



FRONT SIDE

XDAC-1000AX
1120 channels in a single box
980 channels voltage control
140 channels current control

For CV mode:
Setting accuracy: ±100 μV
Measurement accuracy: ±120 μV

For CC mode:
Setting accuracy: ±1.2 μA
Measurement accuracy: ±4 μA

Unipolar 18 ~ 36 VDC power supplies (+ and -) required

9 Units of XDAC-120U-R4G8
Daisy Chained 1080 channels in total
(9 x @120 channels)
All channels support
voltage and current control

For CV mode:
Setting accuracy: ±131.6 μV
Measurement accuracy: ±87.9 μV

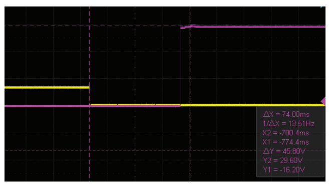
For CC mode:
Setting accuracy: ±2.5 μA
Measurement accuracy: ±1.8 μA

SPECIFICATION

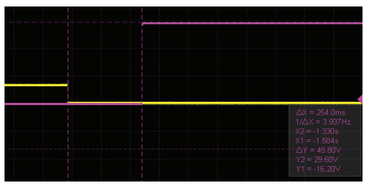
Quad Core Cortex 64-bit ARM v8 processor
Unipolar voltage output 0 ~ 36 VDC (CV mode)
Current output 0 ~ 300 mA (CC mode)
16-bit voltage and current control resolution
Gigabit Ethernet/LAN connectivity
Graphical User Interface (GUI) compatible with Windows, Mac, and Linux
Standard Commands for Programmable Instruments (SCPI)
command support (Python, C#, LabVIEW, and MATLAB)
Shared/common ground
RoHS and CE compliant
Also available in 8-, 40-, and 120-channel version
Operating temperature 0 ~ 40 °C
Operating humidity 0 ~ 80 %
Premium range options: 0 - 5 VDC, 0 - 10 VDC, 0 - 20 VDC,
0 - 200 mA, 0 - 100 mA, 0 - 50 mA each with 16-bit resolution

LATENCY MEASUREMENT METHOD & RESULT

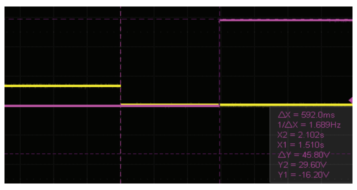
Latency on 40 Channel
(ΔX = 74ms)



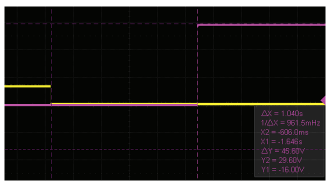
Latency on 120 Channel
(ΔX = 254ms)



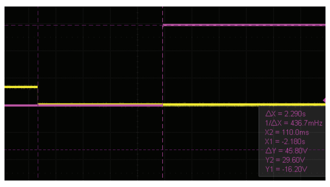
Latency on 240 Channel
(ΔX = 592ms)



Latency on 600 Channel
(ΔX = 1040ms)

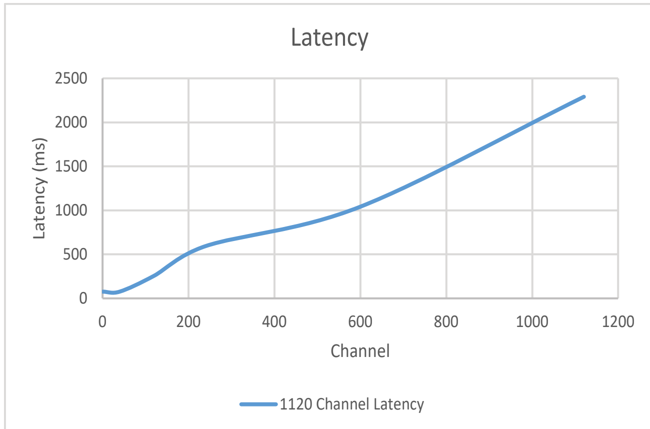


Latency on 1120 Channel
(ΔX = 2290ms)



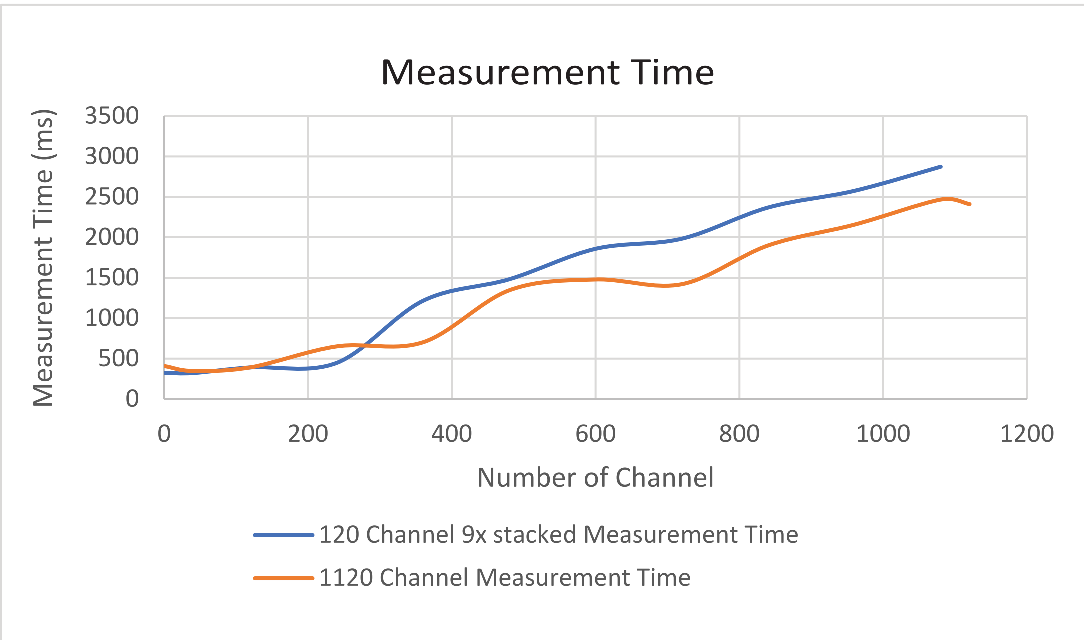
>>>

Graphic Result :



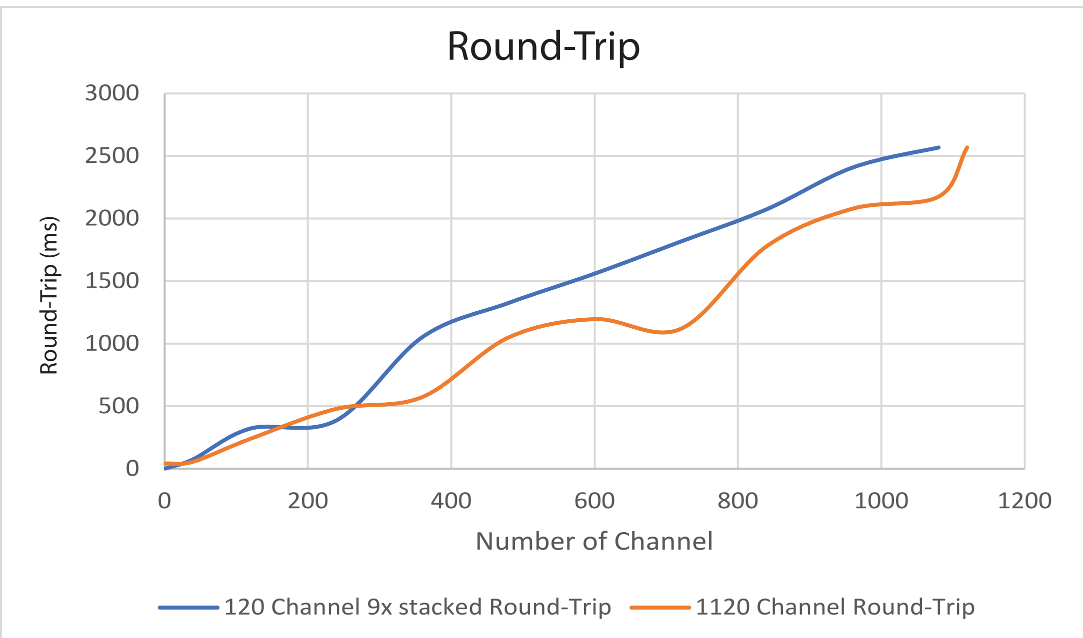
***Latency is the time reponse that spans between user input until the value (99% Accuracy) is achieved in the on Oscilloscope.**

COMPARISON GRAPH



Channel	120 Channel 9x stacked Measurement Time (ms)	1120 Channel Measurement Time (ms)
1	325	405
40	323	346
120	393	391
240	449	650
360	1216	701
480	1482	1344
600	1858	1477
720	1983	1419
840	2368	1898
960	2574	2155
1080	2872	2465
1120		2409

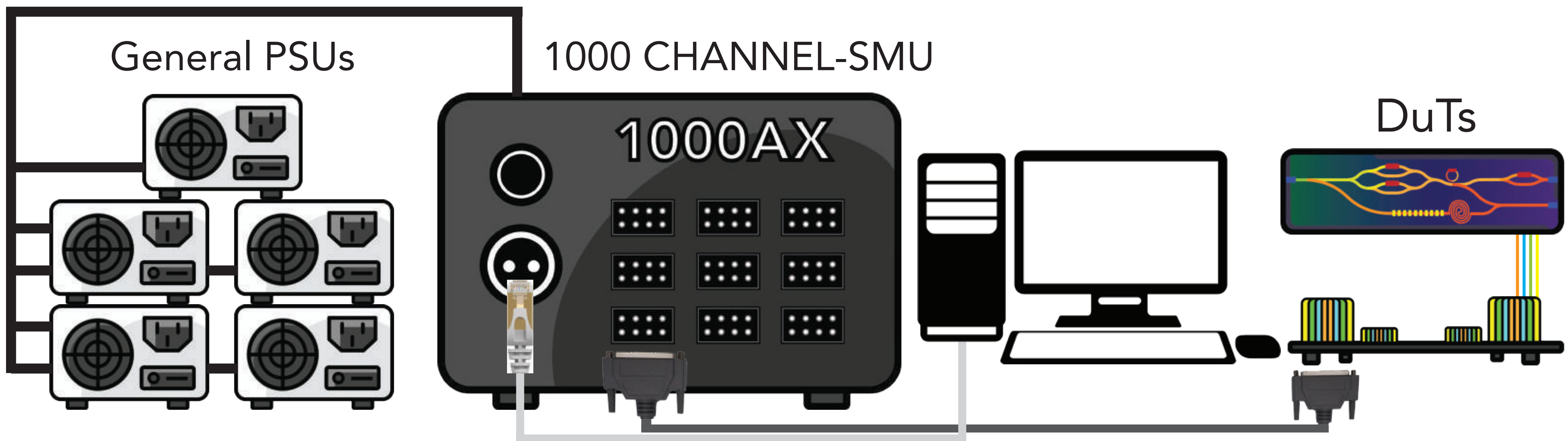
***Measurement Time is time response that spans between user input until the value is measured (99% Accuracy) in GUI.**



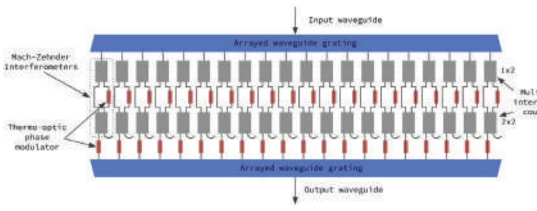
Channel	120 Channel 9x stacked Round-Trip (ms)	1120 Channel Round-Trip (ms)
1	3	41
40	77	56
120	323	239
240	388	478
360	1054	573
480	1326	1048
600	1560	1195
720	1816	1116
840	2074	1776
960	2408	2077
1080	2568	2173
1120		2566

***Round-Trip is time response that spans between user input until the device responds to the message.**

SETTING DIAGRAM OF 1000 CHANNEL SMU



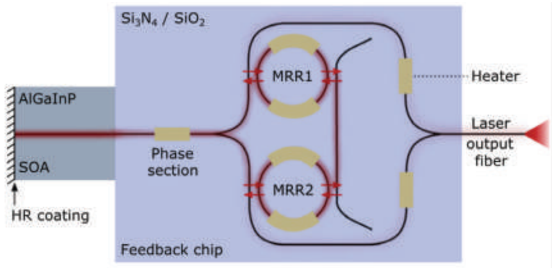
PROVEN APPLICATIONS OF NICSLAB PRODUCTS



All-Photonic Spectrum Flattener for Exoplanet Discovery

N. Jovanovic et al., "Flattening laser frequency comb spectra with a high dynamic range, broadband spectral shaper on-a-chip," Opt. Express, vol. 30, no. 20, pp. 36745–36760, Sep. 2022, doi: 10.1364/OE.470143.

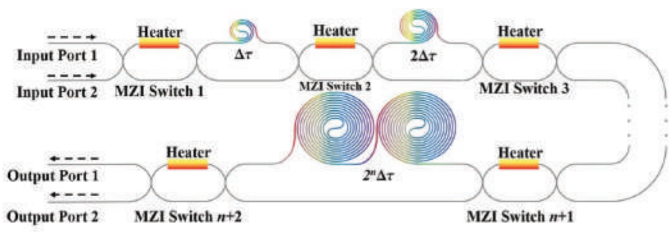
(Caltech, NASA Jet Propulsion Laboratory, Universite Cote d'Azur, Bright Photonics)



Hybrid-Integrated Visible Light Diode Laser

C. a. A. Franken et al., "Hybrid-integrated diode laser in the visible spectral range," Opt. Lett., vol. 46, no. 19, pp. 4904–4907, Oct. 2021, doi: 10.1364/OL.433636.

(University of Twente, LioniX, University of Munster)



Tunable Optical Delay Line

S. Hong, L. Zhang, Y. Wang, M. Zhang, Y. Xie, and D. Dai, "Ultralow-loss compact silicon photonic waveguide spirals and delay lines," Photonics Res., vol. 10, no. 1, p. 1, Jan. 2022, doi: 10.1364/PRJ.437726.

(Zhejiang University)

POTENTIAL APPLICATIONS

Programmable Optical Quantum Computer

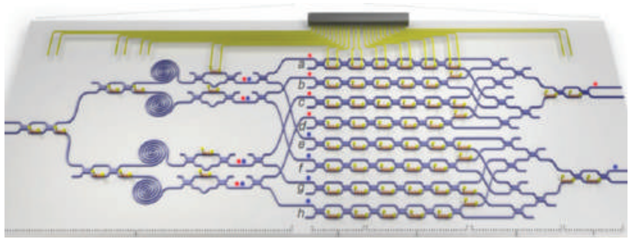


Image source: https://arstechnica.com/science/2018/09/engi-neer-ing-tour-de-force-births-programmable-optical-quantum-computer/

Integrated Quantum Photonics

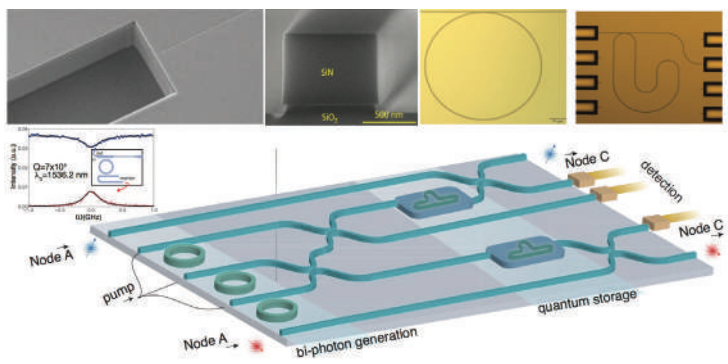


Image source: https://engineering.purdue.edu/HiQP/carousel/-carousel-image-1/qph2.jpg

Field Programmable Photonic Arrays (FPPA)

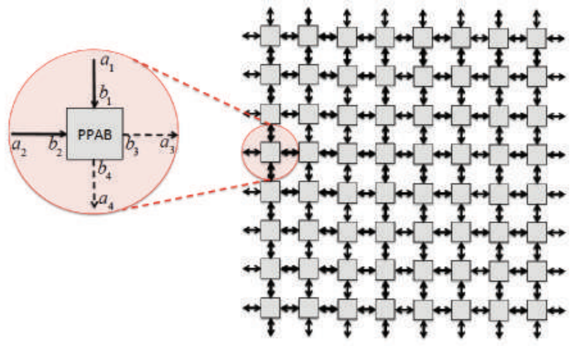


Image source: https://doi.org/10.1364/OE.26.027265

Light Detection and Ranging (LiDAR)

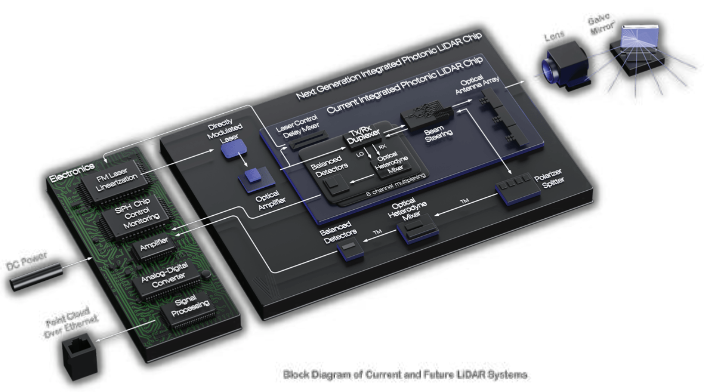


Image source: https://www.embedded.com/silicon-photon-ics-is-key-to-ubiquitous-3d-sensing-with-lidar-on-chip/

Programmable Photonics

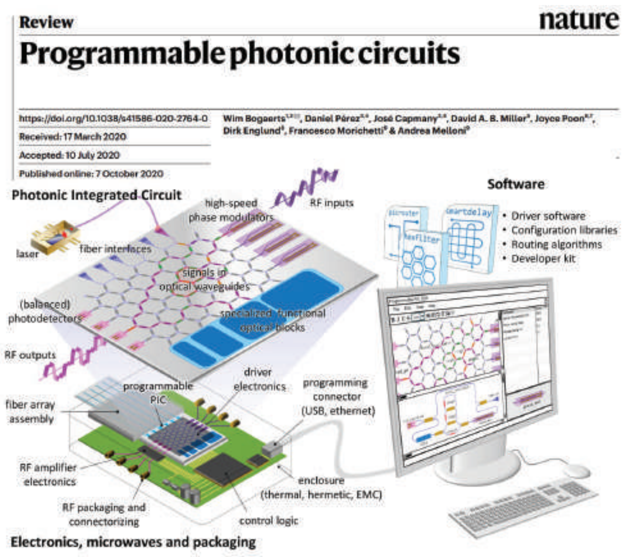


Image source: https://-doi.org/10.1038/s41586-020-2764-0chip/

Photonic Artificial Intelligence (AI) Engine

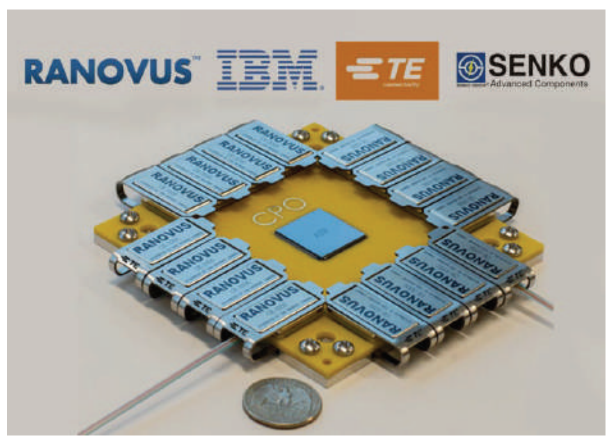


Image source: https://ranovus.com/ranovus-launches-its-single-chip-odin-silicon-photonic-engine-to-support-ml-ai-workloads-for-data-center-and-5g-mobility/