IE120NX Single Chip Image Encoder
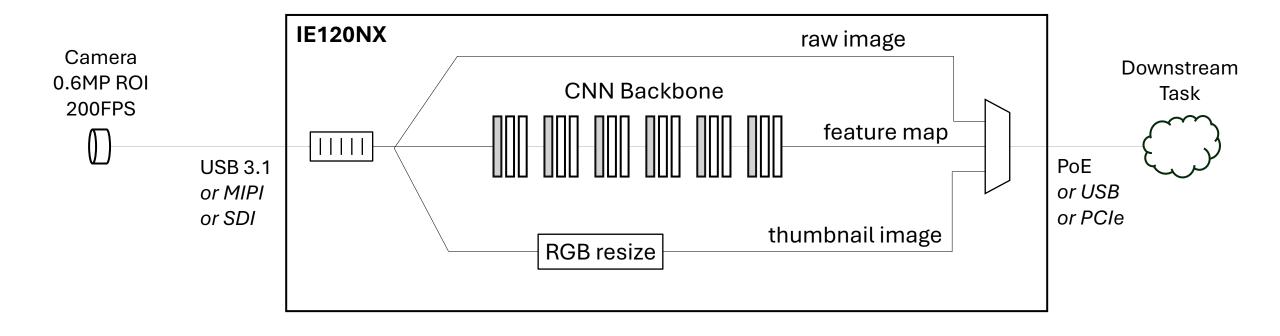
IE120NX Data Sheet

Compute Fabric	Agilex AGF 027, 14M weights (FP8), 3.2 TFLOP/s (FP32)
PyTorch Model	VGG-like CNN backbone, 18 layers, 14M weights, 3 TFLOP/s
Input Shape	768x768 RGB image (FP32)
Output Shape	7x7x768 feature map (FP32)
Throughput	200 frames/s
Latency	150 μs + transport
Power	<20 W
Camera Interface	USB 3.1 5Gb/s, USB3 Vision Standard
Downstream Interface	PoE 12W, ARP, UDP, RTP/RTSP, HTTPS

IE120NX PyTorch Model

channels   16   32   64   384   512   768

[768,768,3] → ... → [7,7,768]

| kernel | 3 3 3 | 3 3 3 | 3 3 3 | 3 3 3 | 3 3 3 | 3 1 1 |
| stride | 2 1 1 | 2 1 1 | 2 1 1 | 2 1 1 | 2 1 1 | 2 1 1 |

```
Conv2d(channels,kernel,stride)
BatchNorm2d(channels)
ReLU()
```