AICAS 2022 Exhibition Introduction

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Company Name	**DEEPX**
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Exhibit item	**Provide FPGA Demo based DEEPX NPU IP (DX)**
Introduction	

1. About DEEPX

DEEPX is the first company in Korea developing artificial intelligence technology and the neural network processing unit (NPU) for edge applications. Our mission is "Bring AI from Cloud to the Edge Devices". DEEPX has clear strengths in terms of power efficiency, AI accuracy, and supporting state-of-the-art DNN algorithms. We aim to provide high-performance, low-power, and low-cost embedded artificial intelligence solutions. DEEPX is prepared to embrace challenges for the most efficient and advanced NPU technology for AIoT.

2. About DEEPX's NPU IP DX

DX is specialized in Deep Learning based Object Detection, Sound Detection, Image Classification, Image Enhancement at scale. DX is fully scalable and customizable architecture ranging from 0.1TOPS for tiny sensors to 200TOPS for AI servers. We will unleash DX series (4 solutions) in the second half of this year. DX L1, L2, M1, H1 deliver the highest power/performance efficiency, and computing power for Consumer Electronics(TVs, Refrigerators, ACs, Smart Home Hub, Door-lock), Security Cameras, AR/VR devices, Smart

sensors, Automotive, Edge Computing, Machine Vision, Smart Mobility(Drone, AMR) and AI Server Market(Smart Factory, Smart Building, Smart Farm, Smart Transportation).

DEEPX NPU supports popular AI based Object Detection algorithms such as MobileNet, RESNET, YOLO, and EfficientDet. And we do run those algorithms with the same accuracy as GPU (FP32). Various commercial applications are utilizing these popular algorithms since each algorithm has its own characteristics and values. The power-efficient and high-performance DEEPX NPU allows battery-powered devices to run the complicated AI algorithms in real-time and DEEPX NPU allows AI cloud service to save energy and make the world greener as well.

To prove the quality of DEEPX NPU, we are conducting demos and FPGA-based implementation running at 260Mhz DEEPX NPU recently reached 992 FPS for the MobileNet Ver.1. Also we've done recently world's first YOLOX Demo on NPU based on FPGA.