Report NO: 18D010008

PER-TAICX-A10-001

Intel® Movidius Myriad X VPU

Bulletin
Compatibility Test Report

Summary	☒ Pass
	☐ Fail
	☐ Pass with Deviation (Comment: _____)

Test Results Category				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	0
Defect Unsolved	0	0	0	0

Issue date	QE Manager	Test Engineer
2018-12-17	KJ Wang	Louie Lee

Version Released Records

Date	Version	Change History	Note
5/26/2015	A0	1. First release	

Note :

    For all test items in this report, 3 results have been defined and described as following:

    Pass: Functionality work perfectly

    Fail: Functionality failed and must be resolved in the next version

    N/A: Functionality Not Applicable or Not Available

    This test report would be updated when re-test completed in product next change version.

Specification Validation
Main Specification

Item	Specification	Result			Note
		Pass	**Fail**	**N/A**	
CPU/Chipset	Intel® Movidius Myriad X VPU	☒	☐	☐	
mPCIe card	PCIe interface + USB interface	☒	☐	☐	
Form Factor	Standard mPCIe form factor	☒	☐	☐	
Operation System	Only for Ubuntu16.04 and Windows10_64bits	☒	☐	☐	

Platform Information

Item	Device Information	Note
Product of department	DMS	
PCB Model / Version	PER-TAICX-A10-001 A0.2	
CPU Board	UP-APL01 A1.0	
Carrier Board	N/A	
CPU	Intel Atom Processor E3950 1.6GHz	
BIOS	UPA1AM21	
Memory Type	Onboard memory 4GB	
eMMC	Onboard 64GB eMMC	
SATA HDD	Intel SSD540s Series 120GB	
SATA DVD-ROM	N/A	
USB DVD-ROM	N/A	
HDMI Monitor	Dell U2713HM	
Camera	CSI Camera 8M	
	USB Logitech C615	
Operating System	☒ Linux Ubuntu16.04 kernel4.4.38-tegra	
	☒ Windows10 Enterprise 64bit V1607	
Power Supply	ATX Power Supply : N/A	
	AT Power Supply: N/A	
	DC Adapter : Jiangsu Sunward Electronics AD36AM050600 5V 6A	
Battery Model	N/A	

Summary Table of contents:

1. Compatibility Test With Linux Ubuntu

1.1. Device detection and driver installation

Process Step:

    a. $lsusb <check Movidius module detected>

Test result:

Test item	Criteria	Result Pass	Result Fail	Result N/A	Note
Movidius device detection <Myriad X>	Found "03e7:2485" devices.	☒	☐	☐	
	Found "2c42:5114" devices	☒	☐	☐	

1.2. SDK installation

Process Step:

    a. Follow Intel OPENVINO installation guide to install SDK.

        < https://software.intel.com/en-us/articles/OpenVINO-Install-Linux >

    b. Run the Image Classification Demo and Inference Pipeline Demo

        Classification Demo `< ./demo_squeezenet_download_convert_run.sh >`

        Inference Pipeline Demo `< ./demo_security_barrier_camera.sh >`

Test result:

Test item	Criteria	Result Pass	Result Fail	Result N/A	Note
Image Classification Demo	Test result show "Classification demo completed successfully"	☒	☐	☐	
Inference Pipeline Demo	An image viewer window that displays a picture(car).	☒	☐	☐	

1.3. Function Test

Process Step:

    a. Run two of Intel AI sample file by device MyriadX

        < Example: object_detection_demo_ssd_async –i "cars.mp4" –m

        vehicle-detection-adas-002.xml –d MYRIAD>

        <Example: interactive_face_detection_demo –i "cam" –m face-detection-adas-001 –d MYRIAD>

Make sure Myriad device is working normally.

*Myriad device support FP16 only.

*Must run setupvars.bat before run intel samples.

Test result:

Test item	Criteria	Result			Note
		Pass	**Fail**	**N/A**	
Object detection	The program should working normally.	☒	☐	☐	Detection time: Myriad 6.80fps
Interactive face detection	The program should working normally.	☒	☐	☐	

1.4. Performance Test and Comparison

Process Step:

a. Run test "interactive_face_detection_demo.exe" and Intel sample "Face-detection-retail-0004.xml",

compare frame per second with Intel NCS2 kit.

<只先 run "Face-detection-retail-0004" 做單一腳本的比對>

Test result:

Test item	Criteria	Result			Note
		Pass	**Fail**	**N/A**	
Performance / fps	Compare with reference score: 40fps±10% < Intel NCS2 kit + E3940 face detection result is 40fps >	☒	☐	☐	

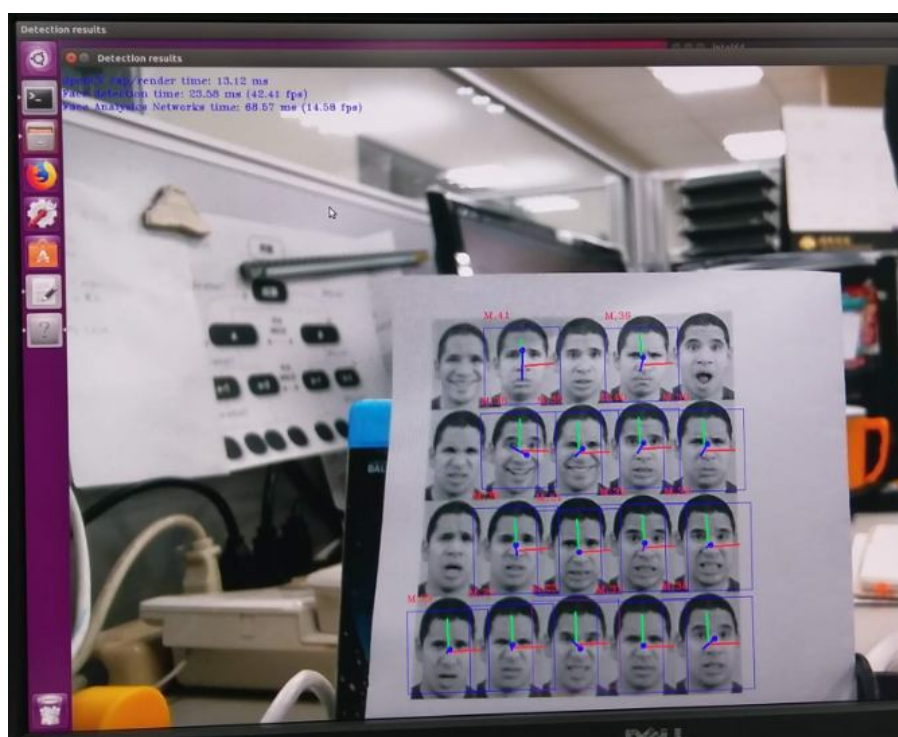| Test item	Test sample	Result			Note
		CPU	**Myriad X**	**Myriad2**	
Performance comparison <Face detection / fps>	Face-detection-retail-0004.xml	16fps	41fps	16.7fps	

1.5. Stability Test

Process Step:
a. Run test "interactive_face_detection_demo.exe" and Intel sample "Face-detection-retail-0004.xml"+

"age-gnder-recognition-retail-0013.xml"+ "head-pose-estimation-adas-0001.xml", and device

select MYRIAD for AI card run in test.

< interactive_face_detection_sample.exe -d MYRIAD -d_ag MYRIAD -d_hp MYRIAD -m

"%INTEL_MODELS%\face-detection-retail-0004\FP16\face- detection-retail-0004.xml" -m_ag

"%INTEL_MODELS%\age-gender-

recognition-retail-0013\FP16\age-gender-recognition-retail-0013.xml" -m_hp

"%INTEL_MODELS%\head-pose-estimation-adas-0001\FP16\head-pose-

estimation-adas-0001.xml">

<燒機選用臉部偵測，年齡偵測，動作偵測三個 sample 腳本，且執行裝置皆選擇 MYRIAD 來做燒機測試>

Test result:

Test item	Criteria	Result			Note
		Pass	Fail	N/A	
Run in test for 12 hours.	System no hang or program error.	☒	☐	☐	OpenCV cap/render time:11ms Face detection time:42fps Face Analysis Networks time:14.4fps
	Face detection performance (fps) is not reduced at room temperature. <42fps>	☒	☐	☐	

Linux runin test picture.

<燒機選用臉部偵測，年齡偵測，動作偵測三個 sample 腳本，且執行裝置皆選擇 MYRIAD 來做燒機測試>

2. Compatibility Test with Windows10

2.1. Device and driver detection

Process Step:

Check Movidius MyriadX device in device manager\Universal Serial Bus devices

Test result:

Test item	Criteria	Result			Note
		Pass	Fail	N/A	
Device and Driver detection	Device was detected and no yellow icon.	☒	☐	☐	

2.2. SDK installation

Process Step::

c. Follow Intel OPENVINO installation guide to install SDK.

< https://software.intel.com/en-us/articles/OpenVINO-Install-Windows>

d. Run the Image Classification Demo and Inference Pipeline Demo

Test result:

Test item	Criteria	Result			Note
		Pass	Fail	N/A	
Image Classification Demo	Test result show "Classification demo completed successfully"	☒	☐	☐	
Inference Pipeline Demo	An image viewer window that displays a picture(car).	☒	☐	☐	

2.3. Function Test

Process Step:

b. Run two of Intel AI sample file by device MyriadX

< Example: object_detection_demo_ssd_async –i "cars.mp4" –m

vehicle-detection-adas-002.xml –d MYRIAD>

<Example: interactive_face_detection_demo –i "cam" –m face-detection-adas-001 –d MYRIAD>

Make sure Myriad device is working normally.

*Myriad device support FP16 only.

*Must run setupvars.bat before run intel samples.

Test result:

Test item	Criteria	Result			Note
		Pass	Fail	N/A	

Object detection	The program should working normally.	☒	☐	☐	
Interactive face detection	The program should working normally.	☒	☐	☐	

2.4. Performance Test and Comparison

Process Step:

b. Run test "interactive_face_detection_demo.exe" and Intel sample "Face-detection-retail-0004.xml",

compare frame per second with Intel NCS2 kit.

<只先 run "Face-detection-retail-0004" 做單一腳本的比對>

Test result:

Test item	Criteria	Result			Note
		Pass	Fail	N/A	
Performance / fps	Compare with reference score: 40fps±10% < Intel NCS2 kit + E3940 face detection result is 40fps >	☒	☐	☐	

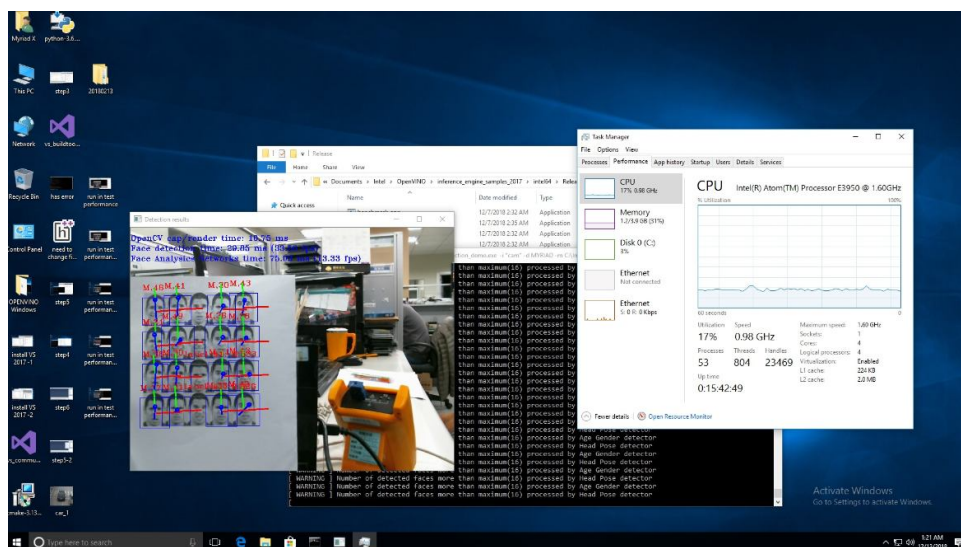| Test item	Test sample	Result			Note
		CPU	GPU	MYRIAD	
Performance comparison <Face detection / fps>	Face-detection-retail-0004.xml	21fps	47fps	40fps	

2.5. Stability Test

Process Step:

b. Run test "interactive_face_detection_demo.exe" and Intel sample "Face-detection-retail-0004.xml"+

"age-gnder-recognition-retail-0013.xml"+ "head-pose-estimation-adas-0001.xml", and device

select MYRIAD for AI card run in test.

< interactive_face_detection_sample.exe -d MYRIAD -d_ag MYRIAD -d_hp MYRIAD -m

"%INTEL_MODELS%\face-detection-retail-0004\FP16\face- detection-retail-0004.xml" -m_ag

"%INTEL_MODELS%\age-gender-

recognition-retail-0013\FP16\age-gender-recognition-retail-0013.xml" -m_hp

"%INTEL_MODELS%\head-pose-estimation-adas-0001\FP16\head-pose-

estimation-adas-0001.xml">

<燒機選用臉部偵測，年齡偵測，動作偵測三個 sample 腳本，且執行裝置皆選擇 MYRIAD 來做燒機

測試>

Test result:

Test item	Criteria	Result			Note
		Pass	**Fail**	**N/A**	
Run in test for 12 hours.	System no hang or program error.	☒	☐	☐	OpenCV cap/render time:7ms Face detection time:36fps Face Analysis Networks time:13.6fps

Windows runin test picture