Qualcomm Developer Project C865DK-super\_resolution1.0

Project Submission

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| **Project Title**\* | **C865DK-super\_resolution1.0** | |
| **Images**  *Upload up to 5 images of your project*  *Please submit/send the original JPEG/PNG files for all images included in the document* | C865DK.png  C865DK.png [alt tag: “C865DK-C865DK-super\_resolution1.0 using the C865DK which is designed with Qualcomm® QCS8250 processor as development board.”] **Type-C.png**   |  | | --- | | **typc** |   [alt tag: “**using the type-c line to develop on C865DK development board.** ”]  [alt tag: “use mini-hdmi line to connect display **.**”]  IP-Camera.png  ip-camera | |
| **Description**\*  *High level description of the project* ***(75 words or less)*** | Use C865DK to add some application scenarios based on C865DK-supermarket - Goods-check1.0 to enhance the resolution of the images taken. | |
| **Objective**   * *What inspired you to create this project?* * *What is your desired outcome?* | 1.Show the powerful decoding power of C865DK  2.Try to use tensorflow lite mode to inference and accelerate based on Android NN API | |
| **Materials Required / Parts List / Tools** | Part Name | Link to purchase |
| C865DK | https://www.thundercomm.com/app\_en/product/1590131656070623 |
| Type-c line | https://detail.tmall.com/item.htm?id=44425281296&ali\_refid=a3\_430582\_1006:1103572855:N:8BFxSxK119dzkfQCc2yGI2us815vvcUHETWnj5g1swo=:6399b40850a40201c56536531a885bcf&ali\_trackid=1\_6399b40850a40201c56536531a885bcf&spm=a230r.1.14.11 |
| IP Camera | https://item.jd.com/ |
| Models | https://storage.googleapis.com/download.tensorflow.org/models/tflite/esrgan/ESRGAN.tflite |
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| Description | Link |
| [Source Code](https://github.com/canyudeguang/Home_Automation) | [https://github.com/ThunderSoft-XA](https://github.com/ThunderSoft-XA/demo-Smart-Motion-detector)/ C865DK-super\_resolution1.0 |
| **Source Code / Source Examples / Application Executable**  *Link to open source / shareable code repository* |  |  |
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|  |  |
| Resource Title | Link or File Name (and provide file) |
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| **Additional Resources**  *List related links or resources such as websites, videos, presentations, or other materials* |  |  |
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| **Build / Assembly Instructions** | Sample outline:   1. Overall design framework and Test environment construction method.      1. Software Build Instructions   Prepare a PC (Ubuntu 16.04/ window10/ MAC);   1. Install app to C865DK device   adb device; adb install C865DK-super\_resolution1.0.apk | |
|  | Sample outline:   1. How does it work?   The App Can be used to increase the camera image resolution enhancement scenarios, such as we are in need of to monitoring, but monitoring equipment on the number of shooting phase is lower, can we need to deal with clarity, version 1.0 is the number of phase static image enhancement, low resolution version 2.0, we will implement in the late of video frame, enhance video clarity. Let's introduce my demo scenario. Firstly, the IP Camera and C865 are connected in the same LAN and the IP Camera will take a static picture every 2 seconds. The C865 connects to the display through HDMI, and the C865 obtains video stream from the IP Camera through RTSP protocol to display the original image and the image with enhanced resolution. [Directory](file:///C:/Users/user/AppData/Local/youdao/dict/Application/8.9.5.0/resultui/html/index.html#/javascript:;) [structure](file:///C:/Users/user/AppData/Local/youdao/dict/Application/8.9.5.0/resultui/html/index.html#/javascript:;) of project:  Main structure of java： ├── eBox //Main function directory│   ├── Activity //group-box control│   ├── Adapter│   ├── AI // AI task to do goods check│   ├── Config //Configuration module│   ├── Constants│   ├── Data //some AI data structure│   ├── Database//Database processing│   ├── Gl //display module│   ├── Log│   ├── Model│   ├── Utils //some common functions│   └── VIew //display interface├── gateway //some info structure│   ├── data│   └── utils├── libyuv //the color conversion├── rtsp //rtsp client module└── util //common functions Function support by cpp：  ├── Affinity //CPU binding functions  ├── BasicUsageEnvironment  │   └── include  ├── groupsock //live555 feature  │   └── include  ├── libbitmap //same bitmap functions  ├── libyuv //mage color space conversion  │   └── libyuv  │   ├── build\_overrides  │   ├── docs  │   ├── include  │   │   └── libyuv  │   ├── infra  │   │   └── config  │   ├── source  │   ├── tools\_libyuv  │   │   ├── autoroller  │   │   │   └── unittests  │   │   │   └── testdata  │   │   ├── msan  │   │   ├── ubsan  │   │   └── valgrind  │   │   └── memcheck  │   ├── unit\_test  │   │   └── testdata  │   └── util  ├── liveMedia //live555 feature  │   └── include  ├── RtspClient //live555 feature  │   └── include  └── UsageEnvironment //live555 feature  └── include | |
| **Usage Instructions** | Sample outline:   1. Install app to C865DK device   adb install Supermarket-Goods-Check2.0.apk   1. Start app.   1)connect wifi/wired network, start “edgebox client” app  ic_launcher.png  2)Click Settings and click “+” to add RTSP URL  Screenshot_20210323-101538.png   1. Back to start get picture 2. Enhanced image and original imag. | |
| **Contributor(s) Info**  *Feel free to include headshots!* | Name | Title  Company |
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Filters and Tags for QDN projects page

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| **Platform/Hardware** | ☐ CSR 101x/102x Bluetooth  ☐ DragonBoard 410c  ☐ mangOH Red/Yellow | ☐ MDM920x LTE for IoT  ☐ QCA-402x WiFi/BLE/Zigbee  √  Turbox™ C865 Development Kit |
| **Software Tools** | ☐ 3D Audio Plugin for Unity  ☐ Adreno GPU SDK  ☐ Hexagon DSP SDK | ☐ Neural Processing SDK for AI  ☐ Snapdragon Profiler |
| **Operating System** | √ Android  ☐ Linux  ☐ ThreadX RTOS | ☐ Ubuntu Core  ☐ Windows 10 IoT Core |
| **Cloud Services/Platform** | ☐ Sierra Wireless AirVantage  ☐ Gizwits Cloud Platform  ☐ AT&T M2X  ☐ IBM Bluemix | ☐ IBM Watson IoT  ☐ Microsoft Azure IoT  ☐ Amazon AWS IoT |
| **Skill Level Required** | √ Advanced  ☐ Beginner  ☐ Intermediate |  |
| **Areas of Focus** | ☐ 3D Printing & Modeling  ☐ Alexa Voice Service  √ Artificial Intelligence  ☐ Bluetooth  √ Computer Vision  ☐ Digital Signage  ☐ Education  ☐ Embedded  ☐ Gaming | ☐ Healthcare  √ IoT  ☐ Robotics  ☐ Security  ☐ Sensors  ☐ Smart Cities  ☐ Smart Home  ☐ Toys  √ Smart Retail |

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