Designed for rapid development of embedded vision applications, this kit includes a DragonBoard™ 410c by Arrow Electronics, based on the Qualcomm® Snapdragon™ 410E processor, with a D3 DesignCore™ Camera Mezzanine Board, and a 5MP micro camera module.

Direct MIPI CSI-2 access to camera data allows more realistic evaluation of embedded vision designs. Direct access eliminates the need to decode USB or Ethernet protocols, resulting in lower power and higher performance.

The kit includes demonstration software running Linux to display 1080p video via HDMI. It is ideal for algorithm development, end application development, and evaluation of image sensors and optics.

**THE DRAGONBOARD™ 410c CAMERA KIT INCLUDES:**
- DragonBoard™ 410c
- D3 Engineering DesignCore™ Camera Mezzanine Board OV5640
- Leopard Imaging Micro Camera Module OV5640 with Autofocus
- Autec 12V Power Supply

**FEATURES**

**DragonBoard™ 410c**
This development board by Arrow Electronics with 64-bit capable Qualcomm® Snapdragon™ 410E processor features advanced processing power, WiFi, Bluetooth® connectivity, and GPS—all packed into a board the size of a credit card. Designed for rapid software development and prototyping, it is ideal for enabling embedded computing and Internet of Things (IoT) products including the next generation of robotics, cameras, medical devices, smart buildings, digital signage, and much more.

**D3 Engineering DesignCore™ Camera Mezzanine Board OV5640**
This mezzanine board directly connects up to two MIPI CSI-2 cameras to the DragonBoard™ 410c. Expansion headers provide access to other communication interfaces on the Snapdragon™ 410E including I2C, SPI, and UART.

**Leopard Imaging Micro Camera Module OV5640**
This miniature camera module features an OmniVision 5MP image sensor and micro lens with autofocus. Available output formats include 5MP at 15fps and 1080p at 30fps.
SPECIFICATIONS

**DragonBoard™ 410c**

<table>
<thead>
<tr>
<th>Processor</th>
<th>Qualcomm® Snapdragon™ 410E Quad-core ARM® Cortex® A53 at up to 1.2 GHz per core 64-Bit capable Qualcomm® Adreno™ 306 400MHz GPU for PC-class graphics with support for advanced APIs, including OpenGL ES 3.0, OpenCL, and content security</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory/Storage</td>
<td>1GB LPDDR3 533MHz 8GB e.MMC 4.51 uSD 3.0 (UHS-I)</td>
</tr>
<tr>
<td>Video</td>
<td>1080p@30fps HD video playback and capture with H.264 (AVC), and 720p playback with H.265 (HEVC)</td>
</tr>
<tr>
<td>Camera Support</td>
<td>Integrated ISP with support for image sensors up to 13MP</td>
</tr>
<tr>
<td>Audio</td>
<td>PCM/AAC+/MP3/WMA, ECNS, Audio+ post-processing (optional)</td>
</tr>
<tr>
<td>Connectivity</td>
<td>WLAN 802.11 b/g/n 2.4GHz Bluetooth® 4.1 One USB 2.0 micro B (device mode only) Two USB 2.0 (host mode only) GPS On-board GPS antenna On-board BT and WLAN antenna</td>
</tr>
<tr>
<td>External Storage</td>
<td>Micro SD card slot</td>
</tr>
<tr>
<td>Power</td>
<td>+6.5V to +18V</td>
</tr>
<tr>
<td>Dimensions</td>
<td>54mm by 85mm meeting 96Boards Consumer Edition standard dimensions specifications</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>0°C to +70°C</td>
</tr>
<tr>
<td>RoHS</td>
<td>RoHS and Reach compliant</td>
</tr>
<tr>
<td>OS Support</td>
<td>Linux</td>
</tr>
</tbody>
</table>

**DesignCore™ Camera Mezzanine Board OV5640**

Conforms to 96Boards Consumer Edition Specification Camera Interfaces: Two MIPI CSI-2 (2-lane) Expansion Interfaces: Two UART, two SPI, one I2C, one PCM, GPIO

**Autec Power Supply**

Plug-in adapter Output: 12V DC Input: 90–264 VAC

**Leopard Imaging Micro Camera Module OV5640**

OmniVision OV5640 1/4" 5MP CMOS image sensor Micro lens with VCM-driven autofocus Focal length: 3.5mm Focus distance: 10cm to infinity FOV: 65°

**D3 Engineering can provide assistance with interfacing other image sensors and custom camera development.**

ORDERING INFORMATION

The DragonBoard™ 410c Camera Kit and its individual components can be ordered from Arrow.

**DragonBoard™ 410c Camera Kit**
Part # DRAGONBOARD 410C CAMERA

**DragonBoard™ 410c**
Part # DRAGONBOARD 410C

**DesignCore™ Camera Mezzanine Board OV5640**
Part # D3 CAMERA MEZZ OV5640 (QTY 1 part # LI-OV5640-MIPI-AF is included)

**Leopard Imaging OV5640 Camera Module**
Part # LI-OV5640-MIPI-AF

**Autec 12V Power Supply**
Part # WM24P6-12-A-QL

To order, contact your local Arrow account manager, call **1-855-326-4757**, or visit [arrow.com](http://arrow.com).

ACCELERATE TIME TO MARKET

The DragonBoard™ 410c Camera Kit enables rapid development of your proof-of-concept prototype. D3 Engineering supports additional smart camera development with our proven DesignCore™ reference designs and our full-cycle embedded system design services. Our expertise with image sensors, optics, video analytics, and imaging system design will help you get to market faster, while reducing the risks and costs of new product development.

CALL: **1-585-429-1550**
EMAIL: sales@D3Engineering.com
VISIT: [D3Engineering.com/Solutions/Embedded-Vision](http://D3Engineering.com/Solutions/Embedded-Vision)