Pumpkin CubeSat Kit Bus compatible On Board Computer (OBC) / Command & Data Handling (C&DH) board using radiation hardened components and radiation effects mitigated design. CubeSat form factor design.

KEY MCU FEATURES
- VA10820 32-bit ARM® Cortex®-M0 MCU
  - Manufactured with HARDISIL® technology
  - Clock rate up to 50MHz
  - 32KB on-chip data SRAM
  - 128KB on-chip program memory SRAM
  - 24 general purpose counter / timers
  - 56 General purpose I/O (GPIO) pins
  - 2 x UARTs
  - 3 SPIs (two master / slave, one master only)
  - 2 x I2Cs
  - Error Detection and Correction (EDAC) and scrub engine for memory protection
  - TMR (Triple Modular Redundancy) on internal logic

SOFTWARE
- Board Support Package (BSP)
  - Example software to demonstrate all peripherals
  - CMSIS compliant
- VA10820 supported by Keil™ MDK-ARM microcontroller software kit, IAR Systems Embedded Workbench, iSYSTEM winIDEA.
- Firmware built upon FreeRTOS operating system for simple incorporation of tasks
- Kit supported by Bright Ascension FDK

BOARD FEATURES
- Evaluation Board comprising of PCB and Board Support Package
  - All critical components are radiation-hardened
  - CAN and UART-to-USB devices are not rad-hard but have radiation mitigation protection circuits
  - PCB dimensions are CubeSat form factor
  - Pumpkin CubeSat Kit Bus compatible (PC104 connector interface)
  - VA10820 ARM Cortex-M0 microcontroller
  - Two Cypress 256KByte FRAMs
  - Cypress 32M Byte Serial NOR Flash
  - Intersil Supervisor IC
  - Intersil LDO regulators
  - Aeroflex 14-bit SAR ADC
  - Standard CubeSat connectors
    - PC104 (CubeSat Kit Bus)
    - Remove-Before-Flight switch
    - EPS board pre-flight power connector
    - JTAG connector
    - CAN connector
    - USB type B connector

REFERENCE DESIGN SUPPORT
- PCB layout files
- VA10820 firmware source code
- Schematic diagram
- Bill of materials

AVAILABLE FROM
- FDK SUPPORT AVAILABLE FROM

For more information, contact below or visit our web site at www.voragotech.com
VORAGO Technologies | 1501 S MoPac Expressway, Suite 350, Austin, Texas, 78746 | info@voragotech.com
DEVELOPMENT BOARD ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Description</th>
<th>Part number</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBC / C&amp;DH Board &amp; Ref Design Kit</td>
<td>RH-OBC-1</td>
<td>VA10820 On Board Computer (OBC) / Command and Data Handling (C&amp;DH) board for CubeSats.</td>
</tr>
</tbody>
</table>

RH-OBC-1 DEVELOPMENT BOARD BLOCK DIAGRAM

![Diagram of VA10820 MCU and its components]

For more information, contact below or visit our web site at www.voragotech.com

VORAGO Technologies | 1501 S MoPac Expressway, Suite 350, Austin, Texas, 78746 | info@voragotech.com

Rev 0.3