**Bd** **Boundary**
Devices

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# NITROGEN6X SOM V2

## Next Generation Boundary Devices System on Module (SOM) design featuring NXP's i.MX 6 family of applications processors, expanded RAM, and 4Gb eMMC

| CPU | |
|---|---|
| CPU Name | NXP/Freescale i.MX6 |
| CPU Type | ARM Cortex™-A9 |
| CPU Cores | 1-4 (Single, Dual Lite, Dual, Quad, Quad PLUS) |
| CPU Clock (Max) | 1GHz |

| Memory | |
|---|---|
| RAM | 512MB - 4GB DDR3 (1GB DDR3 standard) |
| NOR Flash | 2MB Serial NOR Flash |
| eMMC | 4GB |

| Multimedia | |
|---|---|
| 2D/3D Graphics Acceleration | Vivante™ GC2000 Accelerated 2D and 3D |
| Video Encode / Decode | 1080p60 H.264 Decode, 1080p30 H.264 Encode |
| Camera Interfaces | 1x Parallel, 1x MIPI |

| Display | |
|---|---|
| HDMI | v1.4 1920 x 1080 |
| LVDS | 2X LVDS, 24-bit |
| RGB | 24-bit RGB |

| Networking | |
|---|---|
| Ethernet | 10/100/1GB |

| Audio | |
|---|---|
| Headphone | Yes |
| Microphone | Analog MIC |

| Connectivity | |
|---|---|
| I2C | X3 |
| SPI | x2 |
| UART | Up to 5 |
| SD / MMC | x3 SD/eMMC |
| USB | USB 2.0: 1x Host, 1x OTG |
| SATA | SATA II interface, 3.0 Gbps |
| CAN | x1 |
| PCIe | Gen 2.0 |
| JTAG | Optional - Contact Us |

## OS Support

| 0 | **Nit6QP_SOM_V2_4GB** i.MX 6QuadPLUS, 4GB DDR3, 4GB eMMC |
|---|---|
| 0 | **Nit6S_SOM_V2** i.MX 6Single, 1GB DDR3, 4GB eMMC |
| 0 | **Nit6Q_SOM_V2_2GB** i.MX 6Quad, 2GB DDR3, 4GB eMMC |
| 0 | **Nit6Q_SOMi_V2** i.MX 6Quad, 1GB DDR3, 4GB eMMC, I-Temp |
| 0 | **Nit6D_SOM_V2** i.MX 6Dual, 1GB DDR3, 4GB eMMC |
| 0 | **Nit6Q_SOM_V2** i.MX 6Quad, 1GB DDR3, 4GB eMMC |

**Add to cart**

The Nitrogen6X SOM V2 is our next-generation, low cost, highly integrated System-on-Module (SOM)based on the NXP i.MX 6 family of applications processors.  The Nitrogen6X SOM V2 is fully compatible with the previous Nitrogen6X SOM, but with some notable improvements, including an i.MX 6 QuadPLUS version. The Nitrogen6 SOM V2 is ideal for customers looking for rapid product development while maintaining the flexibility of a custom design.

The Nitrogen6X SOM V2 has 10 year guaranteed availability and industrial temperature versions including conformal coating options.  The Nitrogen6x SOM V2 can be built with NXP i.MX 6 Single, Dual Lite, Dual, Quad, and QuadPLUS Processors. It can also include from 512MB up to 4GB of DDR3 RAM. Email info@boundarydevices.com to discuss all build options.

Notable improvements in V2 include:

- 4GB eMMC
- 2nd LVDS Channel
- Modified power supply architecture to support i.MX6 QuadPLUS processor
- Modified DDR3 layout to support up to 4GB DDR3
- OS Supported:Yocto, Ubuntu, Buildroot, and Android*

NOTE:  Nitrogen6X SOM V2 requires a different Uboot/Kernel than Nitrogen6X SOM V1 due to on-board eMMC.

Design your own carrier board or contact us for a custom carrier board quote. If designing your own carrier board, send us your schematics and layout for a no cost, high level review.

## CPU

### CPU

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| Camera Interfaces | 1x Parallel, 1x MIPI |

### Display

| Linux | Yocto, Ubuntu, Buildroot |
|---|---|
| Android | up to Nougat 7.1.1 |

### Mechanical Specifications

| Dimensions (L x W) | 57mm x 63.5mm |
|---|---|

### Environmental Specifications

| Commercial Temp (0 to 70C) | Yes |
|---|---|
| Industrial Temp (-40C to +85C) | Optional |

Please contact info@boundarydevices.com for more information or with any questions about designing a custom Nitrogen6X SOM V2 or Carier Board to your exact specifications.

## Downloads

- Nitrogen6X_SOM_V2_Hardware_Manual_rev1 pdf
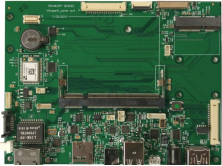- Nit6_SOM_V2 pdf - Register to Download
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- i.MX6 SOM SODIMM connector_20170524 pdf - Register to Download

## SOFTWARE SUPPORT

# Compatible Products

**Nit6X_Carrier**

**BD101LCC1**

10.1" 1280x800 with PCAP

**Nit6X_10.1Hannstar**

10.1" 1024x768 with PCAP

**Nit6X_1024x600**

CAP Multi-touch

**Nit6X_800x480**

4-wire touch

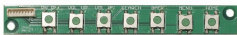**Display Integration**

Display + Touch Integration

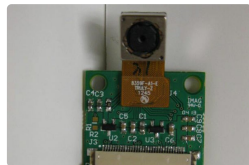**mPCIe to PCI-E DB**

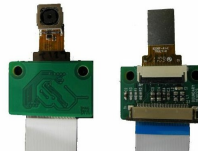mPCIE to PCI-E Daughter Board

**Nit6X_JTAG**

i.MX6 JTAG Adaptor

**Nit6X_Android**

Android Buttons

**Nit6X_5MP_MIPI**

5MP MIPI Camera

**Nit6X_5MP**

5MP Camera for Nit6x/BD-SL-i.MX6

**Nit6X_SATA**

SATA Cable

**MU609**

Cellular Modem for iMX6

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