



FTF 2016
TECHNOLOGY FORUM

NXP HANDS ON WITH THE SCM-i.MX 6DUAL/QUAD QUICK START BOARD

FTF-DES-N1989

ALEX SIERRA
NIKKI VERREDDIGARI
AMANDA MCGREGOR
SYSTEM SOLUTIONS
FTF-DES-N1989
MAY 18, 2016

PUBLIC USE



AGENDA

- Overview of Single Chip Modules (SCM)
- Product Availability and Roadmap
- Quick Start Board Features
- Software Release Process
- Hands-on Training



SCM Hands On Training Objectives

What will you learn?

- How to boot up the quick start board for SCM-i.MX 6D/Q
- How to launch a multimedia demo
- How to boot from the internal spi-nor

OVERVIEW OF SINGLE CHIP MODULES (SCM)

New Solutions are Required

Growth Markets

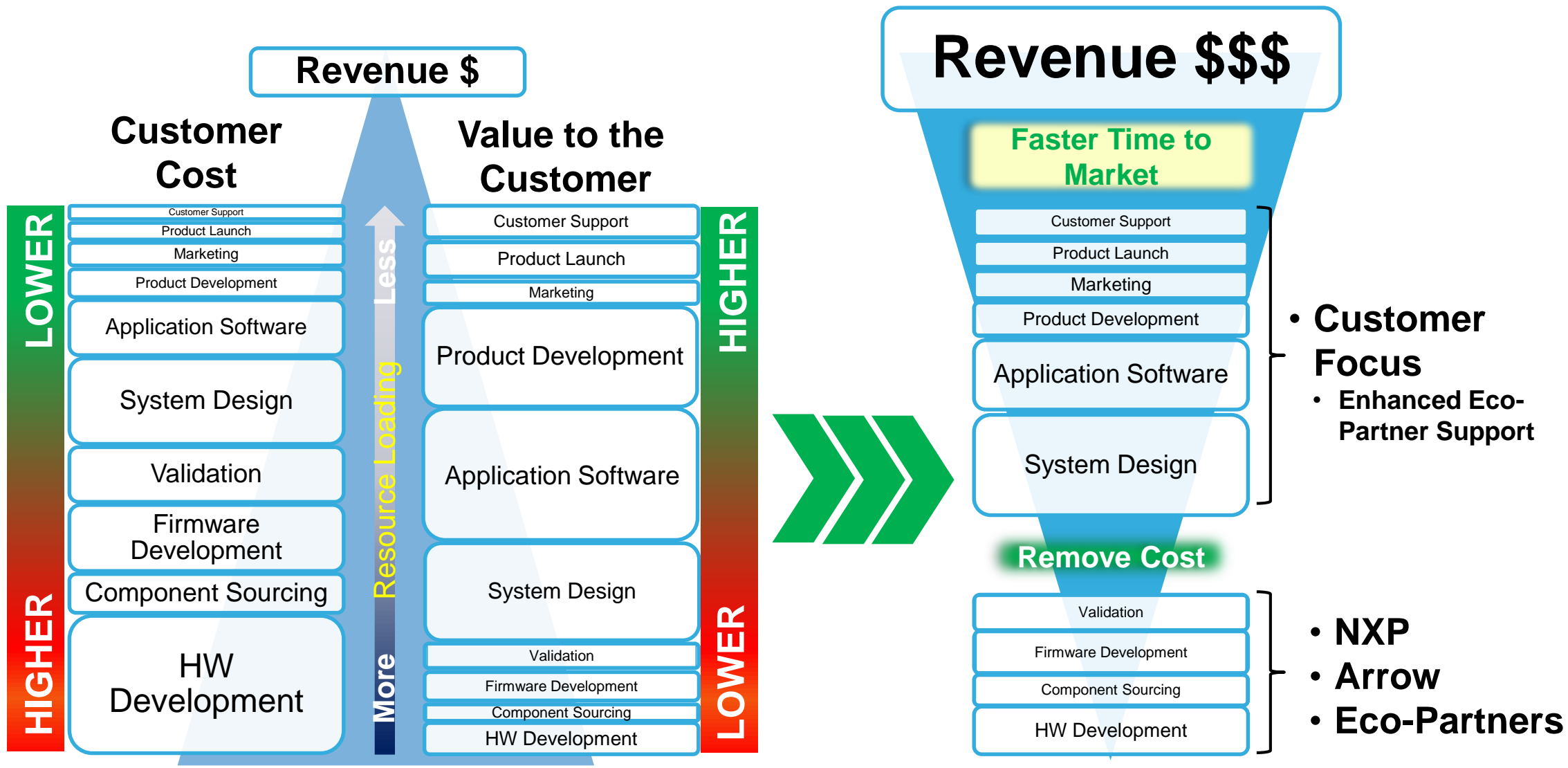
- Cloud computing – massive data storage, easy access, data on the move
- Big data analytics – local as remote manipulation and data
- Autonomous and assisted products – massive levels of integration and sensing
- Mobility and security – wearables, POS, mesh networks
- Industry 4.0 – IoT

What emerging products need

- More integration
- More features
- More communications
- More access
- More sensing
- Faster time to market



Customer Value Based Costing



Why Choose a Single Chip System Module (SCM)?

- **>50% reduction** over current discrete solutions for your application board
- Reduces average **development time by up to 25%**
- **Eliminates extensive testing** and validation for your application
- **Reduces design complexity** of integrating and validating DDR memory and power management into customer design
- **Provide customizable option** for unique customer solutions
- **Higher level of customer enablement** (hardware integration and software enablement)
- **Reduces our customer's supply chain complexity**

PRODUCT AVAILABILITY AND ROADMAP

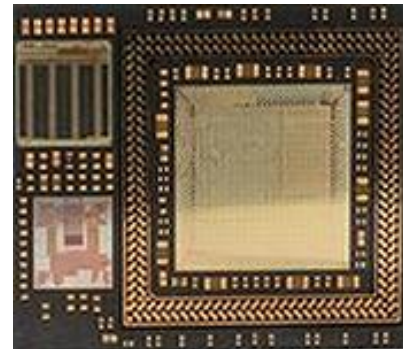


NXP SINGLE CHIP SYSTEM MODULES (SCM)

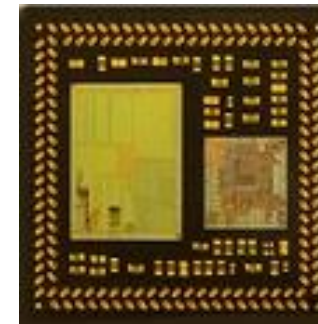
THE WORLD'S SMALLEST
SINGLE CHIP SYSTEMS

SCM-i.MX 6D/6Q, 6SOLOX

Smaller than a 2-cent Euro or US Dime



SCM Family 1:
SCM-i.MX 6Dual/6Quad



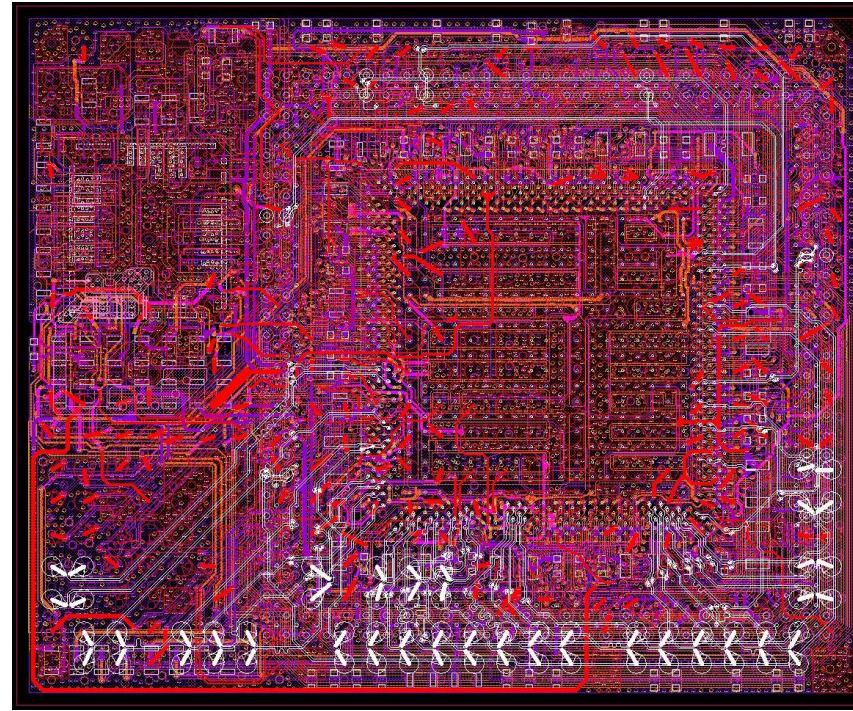
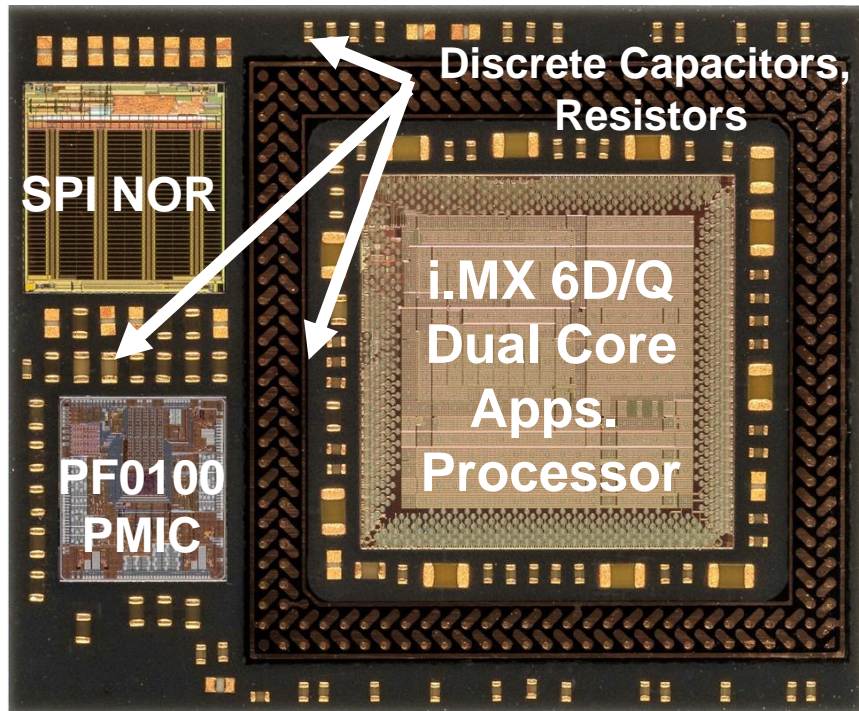
SCM Family 2:
SCM-i.MX 6SoloX



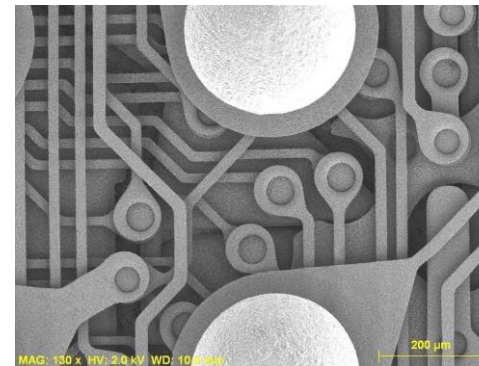
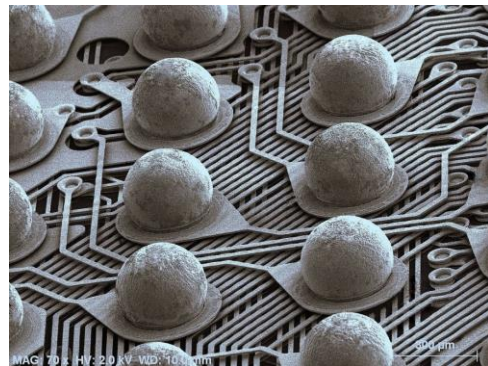
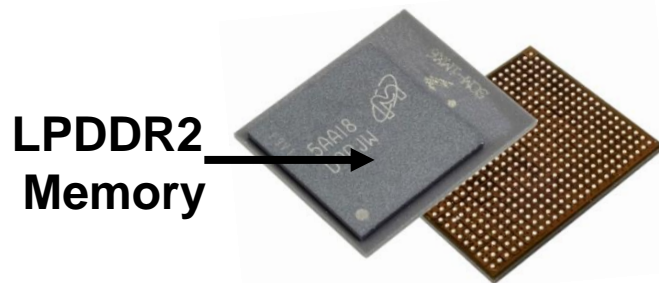
∴ [#NXPFTF](https://twitter.com/NXPFTF)



System Solution: Family 1 SCM-i.MX 6D/6Q



- 14 mm x 17 mm x 1.7 mm
- i.MX 6Dual or i.MX 6Quad
- PF0100 PMIC
- 16 MB SPI NOR
- Enabled for 1 GB or 2 GB LPDDR2 PoP or 512 MB plus 4 GB eMMC ePoP
- 109 discrete components
- 500 BGA balls P0.65 mm
- Commercial and industrial devices available

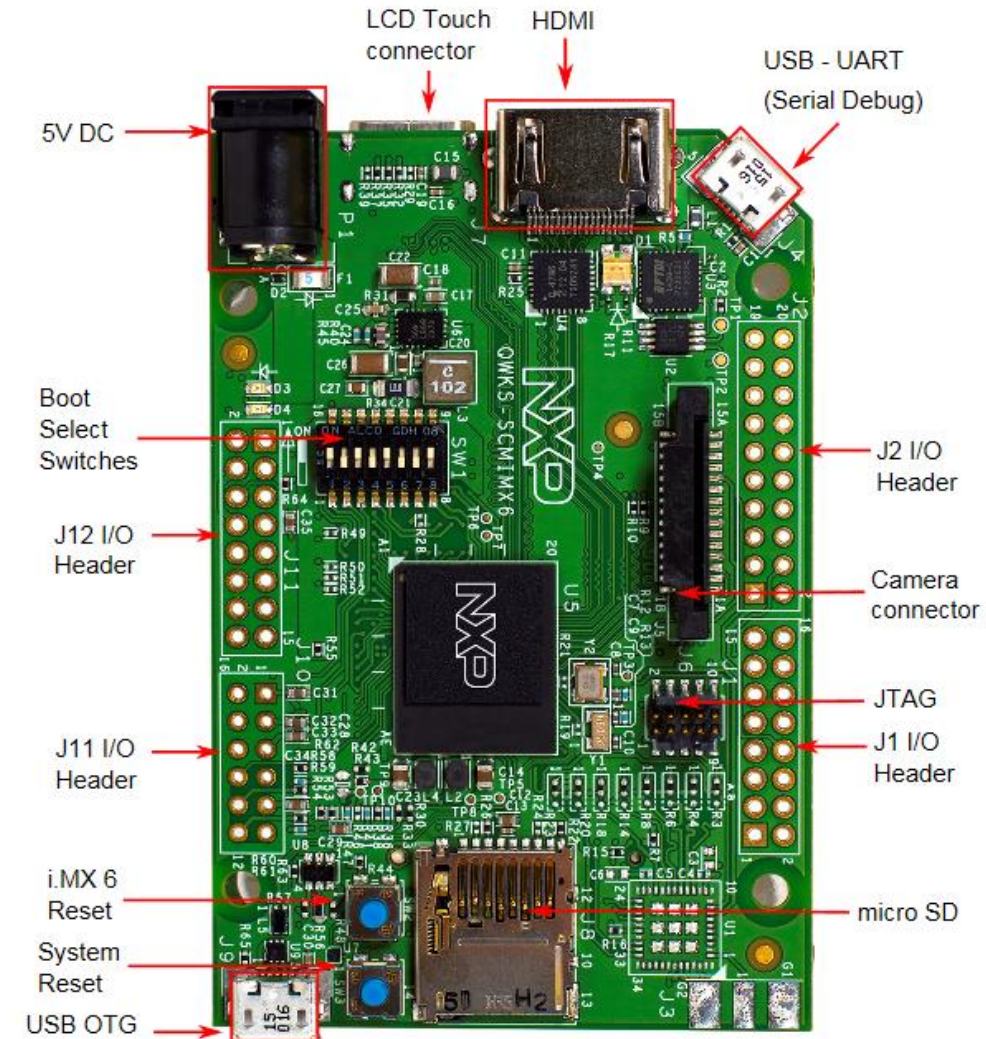


SCM-i.MX 6Dual/6Quad Collateral

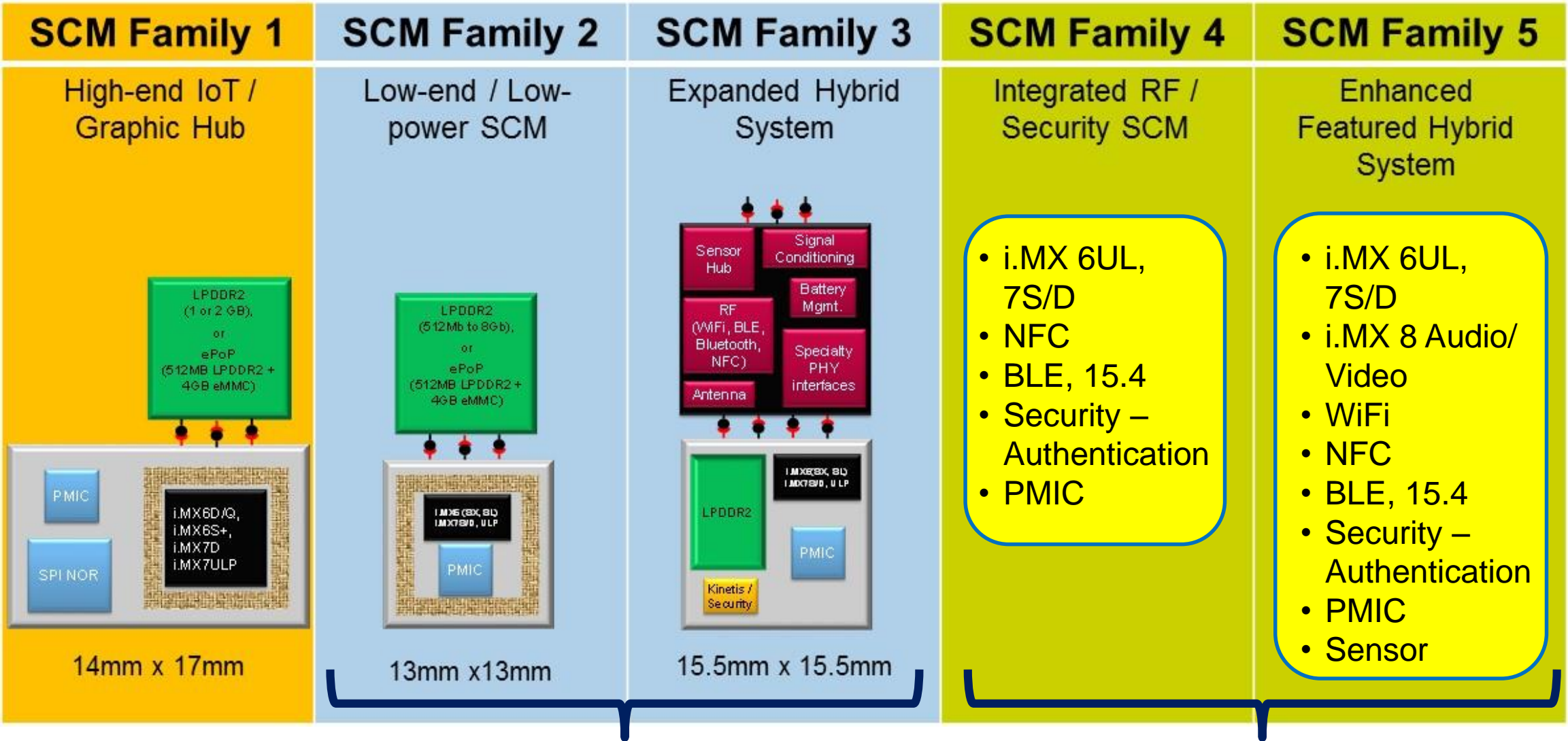
- Orderable part #'s in place (NXP p/n, Arrow p/n)

Assembly Part Number	SCM Revision	SCM Family	DRAM	DRAM Part Number	Qualification Tier
MSCMMX6DZDK08AB	Rev1.0	SCM-i.MX6D	-	-	Commercial
MSCMMX6QZDK08AB	Rev1.0	SCM-i.MX6Q	-	-	Commercial
MSCMMX6DZDK08AB1G0A	Rev1.0	SCM-i.MX6D	1 GB LPDDR2	MT42L128M64D2LL-25AT:A	Commercial
MSCMMX6DZDK08AB2G0A	Rev1.0	SCM-i.MX6D	2 GB LPDDR2	MT42L256M64D4LM-18 WT:A	Commercial
MSCMMX6QZDK08AB1G0A	Rev1.0	SCM-i.MX6Q	1 GB LPDDR2	MT42L128M64D2LL-25AT:A	Commercial
MSCMMX6QZDK08AB2G0A	Rev1.0	SCM-i.MX6Q	2 GB LPDDR2	MT42L256M64D4LM-18 WT:A	Commercial

- Development boards in place along with support HW (LVDS display, WLAN +BT modules, etc.)
- NXP website live (www.nxp.com/scm)
 - Datasheet, fact sheets, SW users guide, HW developers guide, App notes, Linux SW patch releases, Quick Start board users guide etc.
- Software Enablement
 - Linux (3.14.x kernel)
 - Android (5.x July)
- Longevity program (10year, Feb 2026) on SCM



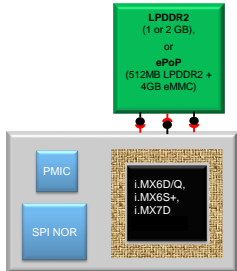
System Solutions Family of Products



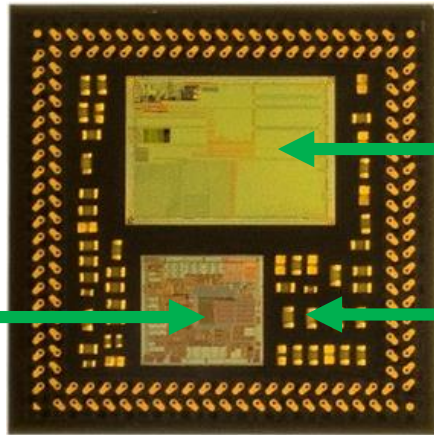
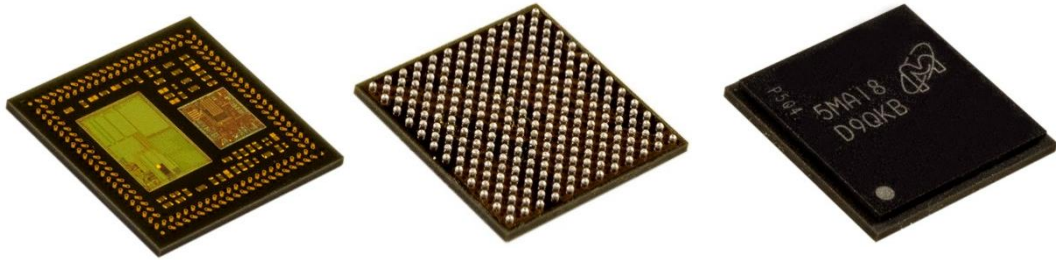
Launching this week

In definition

Derivative Products for Family 1

SCM	SCM Family	SCM Family	Configuration	Availability	
				Beta Samples	Production
SCM-i.MX6D (Commercial)	1		i.MX6D, PMIC, SPI-NOR, PoP LPDDR2 Memory (1 or 2 GB)		In Production
SCM-i.MX6Q (Commercial)	1		i.MX6D, PMIC, SPI-NOR, PoP LPDDR2 Memory (1 or 2 GB)		In Production
SCM-i.MX6D ePoP (Commercial)	1		i.MX6D, PMIC, SPI-NOR, ePoP (512MB LPDDR2 + 4GB eMMC) Memory	Available	Jun-16
SCM-i.MX6S (Commercial)	1		i.MX6S*, PMIC, ePoP or LPDDR2	Jun-16	Jul-16
SCM-i.MX6D/Q (Industrial)	1		i.MX6D/Q, PMIC, SPI-NOR, PoP LPDDR2 Memory		In Production

Family 2 SCM-i.MX 6SX (13 mm x 13 mm)



i.MX 6SX Apps Processor

47 Discrete components

PD0100 PMIC

PoP Memory options:

- 512MB, 1GB LPDDR2
- ePoP (512MB LPDDR@ + 4GB eMMC)

0.75 mm Ball pitch (diagonal array)

BSP released

Enabled for Linux

LPDDR2 - 168 FBGA
512 MB LPDDR2/ 1 GB LPDDR2 / ePoP - 0.5GB LPDDR2 + 4GB eMMC

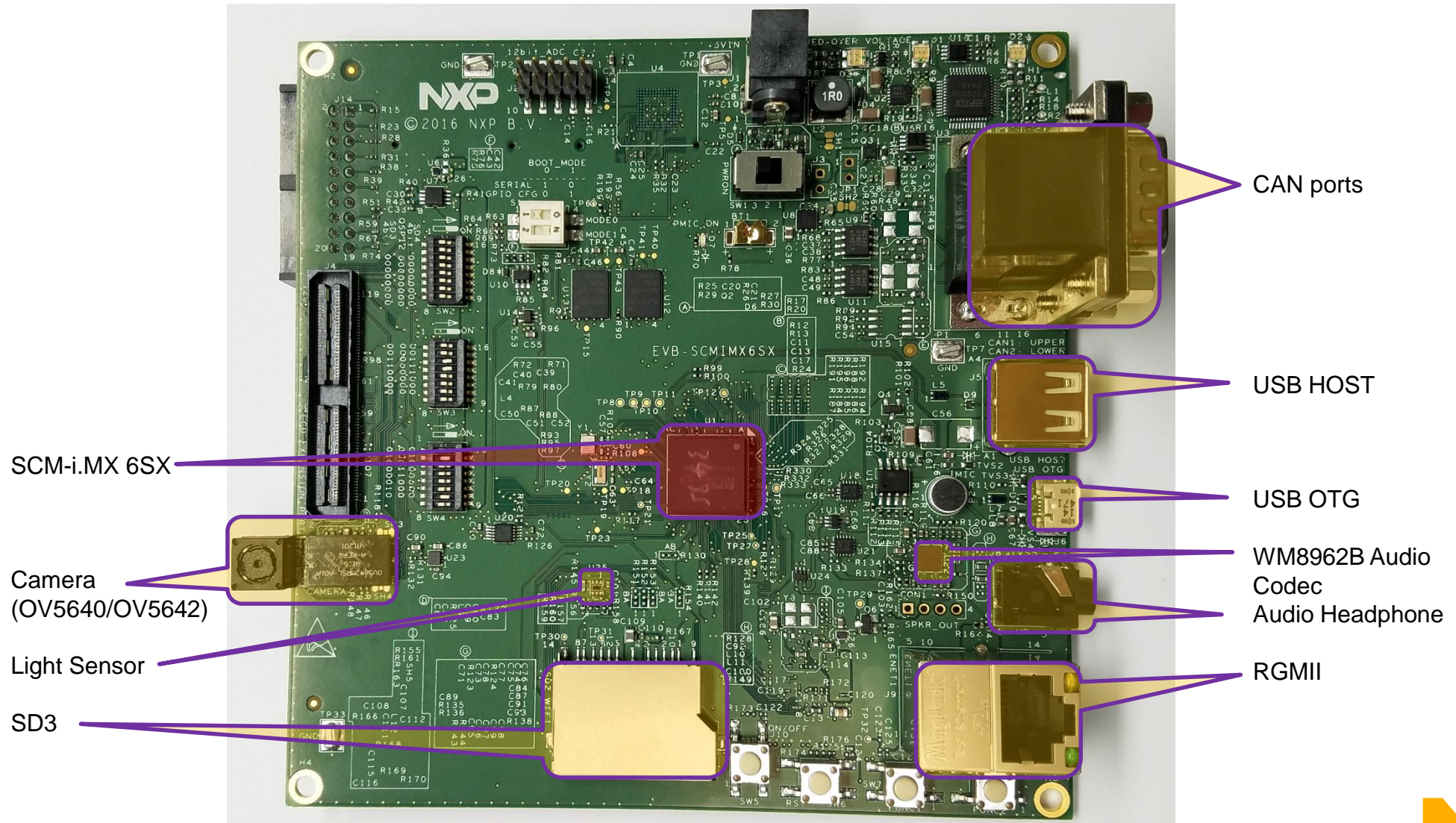
SCM-i.MX6 SoloX																																									
<table border="1"> <tr><th>System Control</th></tr> <tr><td>Secure JTAG</td></tr> <tr><td>PLL, Osc</td></tr> <tr><td>Clock & Reset</td></tr> <tr><td>Smart DMA</td></tr> <tr><td>IOMUX</td></tr> <tr><td>Timer x3</td></tr> <tr><td>PWM x8</td></tr> <tr><td>Watch Dog x3</td></tr> <tr><td>RDC</td></tr> </table>	System Control	Secure JTAG	PLL, Osc	Clock & Reset	Smart DMA	IOMUX	Timer x3	PWM x8	Watch Dog x3	RDC	<table border="1"> <tr><th>CPU1 Platform</th></tr> <tr><td colspan="2">Cortex-A9</td></tr> <tr><td>32KB I-cache</td><td>32KB D-cache</td></tr> <tr><td>NEON</td><td>PTM</td></tr> <tr><td colspan="2">256KB L2-cache</td></tr> <tr><th>CPU2 Platform</th></tr> <tr><td colspan="2">Cortex-M4, MPU, FPU</td></tr> <tr><td>16KB I-cache</td><td>16KB D-cache</td></tr> <tr><td colspan="2">64KB TCM</td></tr> </table>	CPU1 Platform	Cortex-A9		32KB I-cache	32KB D-cache	NEON	PTM	256KB L2-cache		CPU2 Platform	Cortex-M4, MPU, FPU		16KB I-cache	16KB D-cache	64KB TCM		<table border="1"> <tr><th>Connectivity</th></tr> <tr><td>MMC 4.4 / SD 3.0 x3</td></tr> <tr><td>UART x6</td></tr> <tr><td>I²C x 4, SPI x5</td></tr> <tr><td>USB2 OTG & PHY</td></tr> <tr><td>USB2 Host & PHY</td></tr> <tr><td>1Gb Ethernet</td></tr> <tr><td>ESAI, I²S/SSI x5</td></tr> <tr><td>S/PDIF Tx/Rx</td></tr> <tr><td>2 x FlexCAN</td></tr> <tr><td>GPIO, Keypad</td></tr> <tr><td>MLB25/50*</td></tr> <tr><td>1x PCIe 2.0 (x1 lane)*</td></tr> </table>	Connectivity	MMC 4.4 / SD 3.0 x3	UART x6	I ² C x 4, SPI x5	USB2 OTG & PHY	USB2 Host & PHY	1Gb Ethernet	ESAI, I ² S/SSI x5	S/PDIF Tx/Rx	2 x FlexCAN	GPIO, Keypad	MLB25/50*	1x PCIe 2.0 (x1 lane)*
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Power Management - MMPF0100		
SW1AB	SW1C*	SW2
SW3AB	SW4*	SWBST
VGEN1*	VGEN2*	VGEN3
VGEN4	VGEN5*	VGEN6




* These features are either unavailable or reduced in functionality on the 265BGA.



SCM-i.MX 6SX Evaluation Board

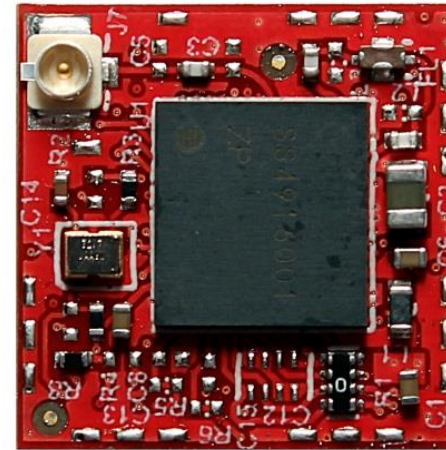
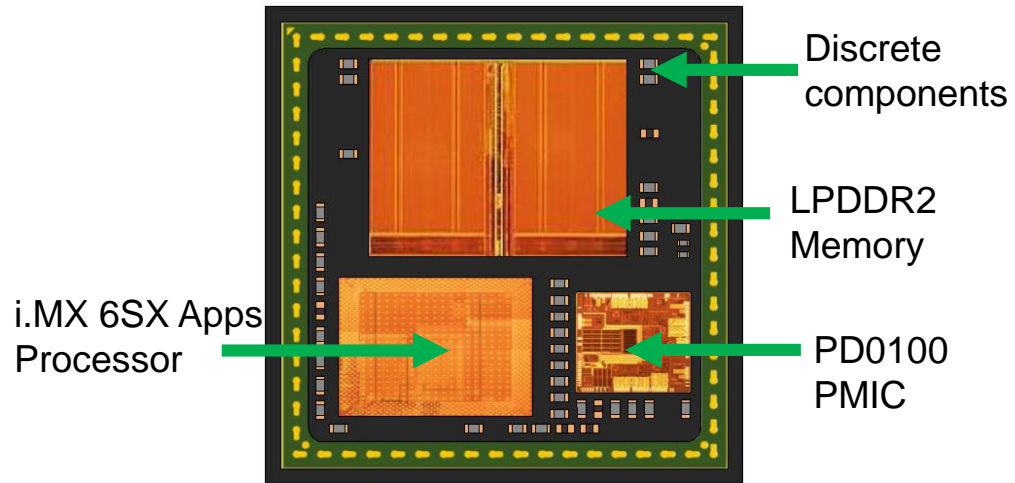


Motivation for Developing the SCM V-Link Hybrid Module

- Providing customers an integrated applications processor + PMIC + Memory 
 - Address design and signal integrity challenges
- Customers asking for smaller and smaller form/ factors 
- Customers asking for higher level of functionality 
- Providing customers flexibility in features and functionality
 - Adding RF (Wi-Fi, BLE, NFC, etc.), Sensors, Audio Codex, PHY interfaces, etc.
- Providing flexibility at low cost

Family 3 SCM-i.MX 6SX V-Link (15.5 mm x 15.5 mm)

NXP Base SCM

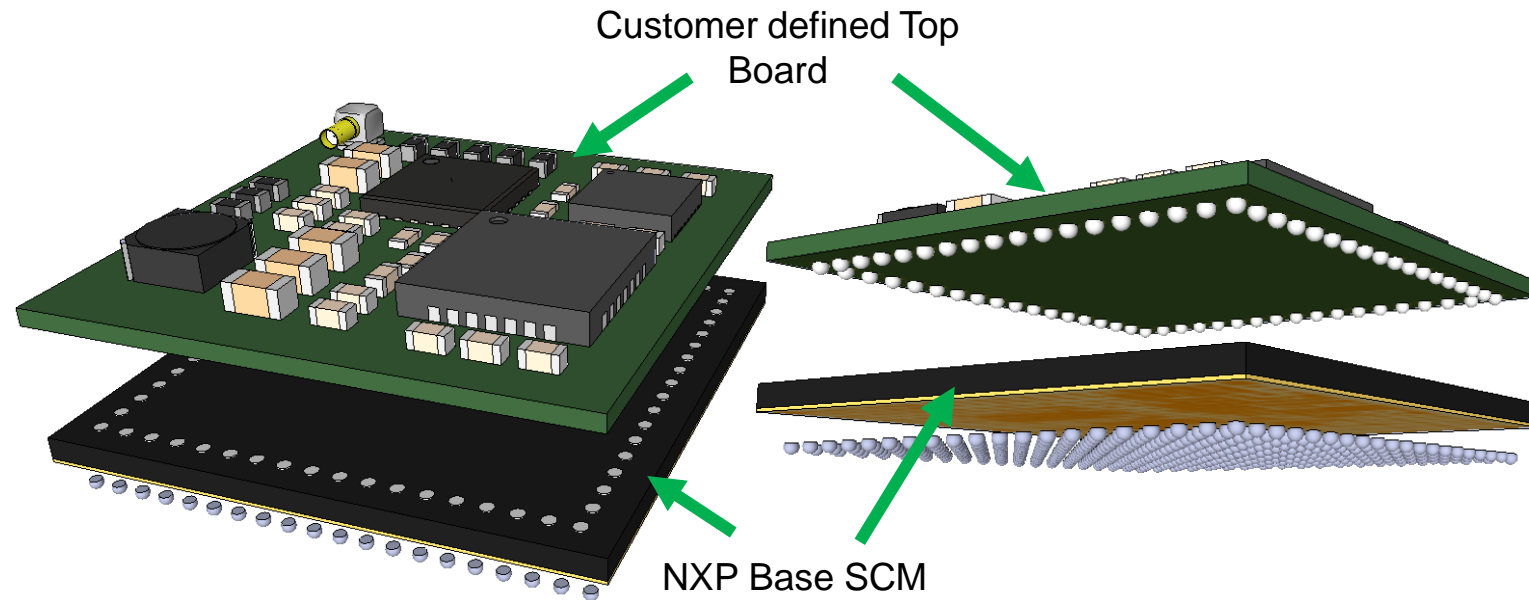


Custom Top Board (PCB or Substrate Based):

- Customer defined (RF, Sensors, Battery mgmt., PHY interface, Audio Codex, etc.)

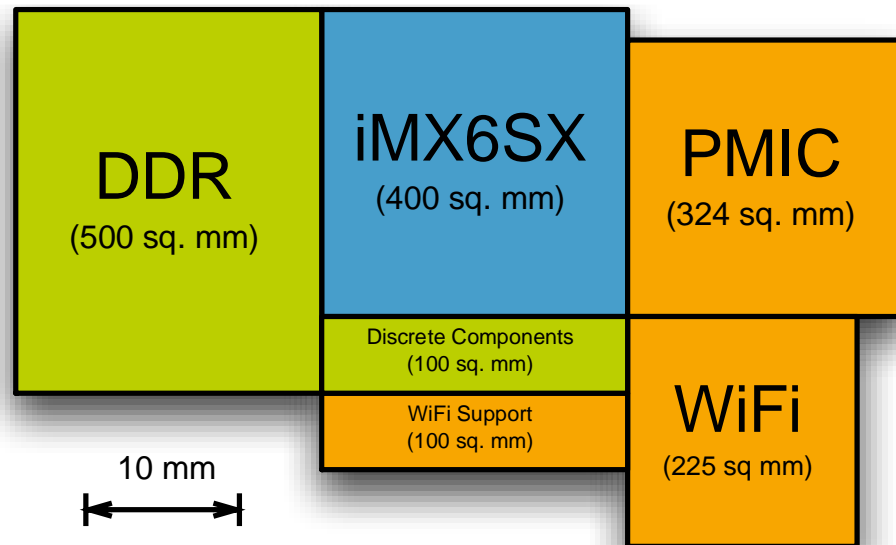
15.5 mm x 15.5 mm
0.75 mm Ball pitch

BSP released
Enabled for Linux

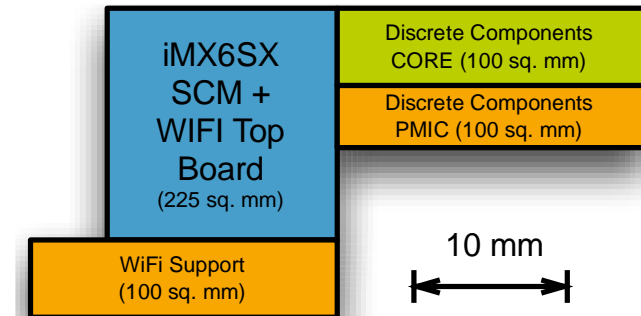


Change in i.MX 6 Design Topology

Traditional layout using discrete IC and components on a PCB board



Equivalent PCB Board area utilizing NXP SCM with the V-Link Top Board

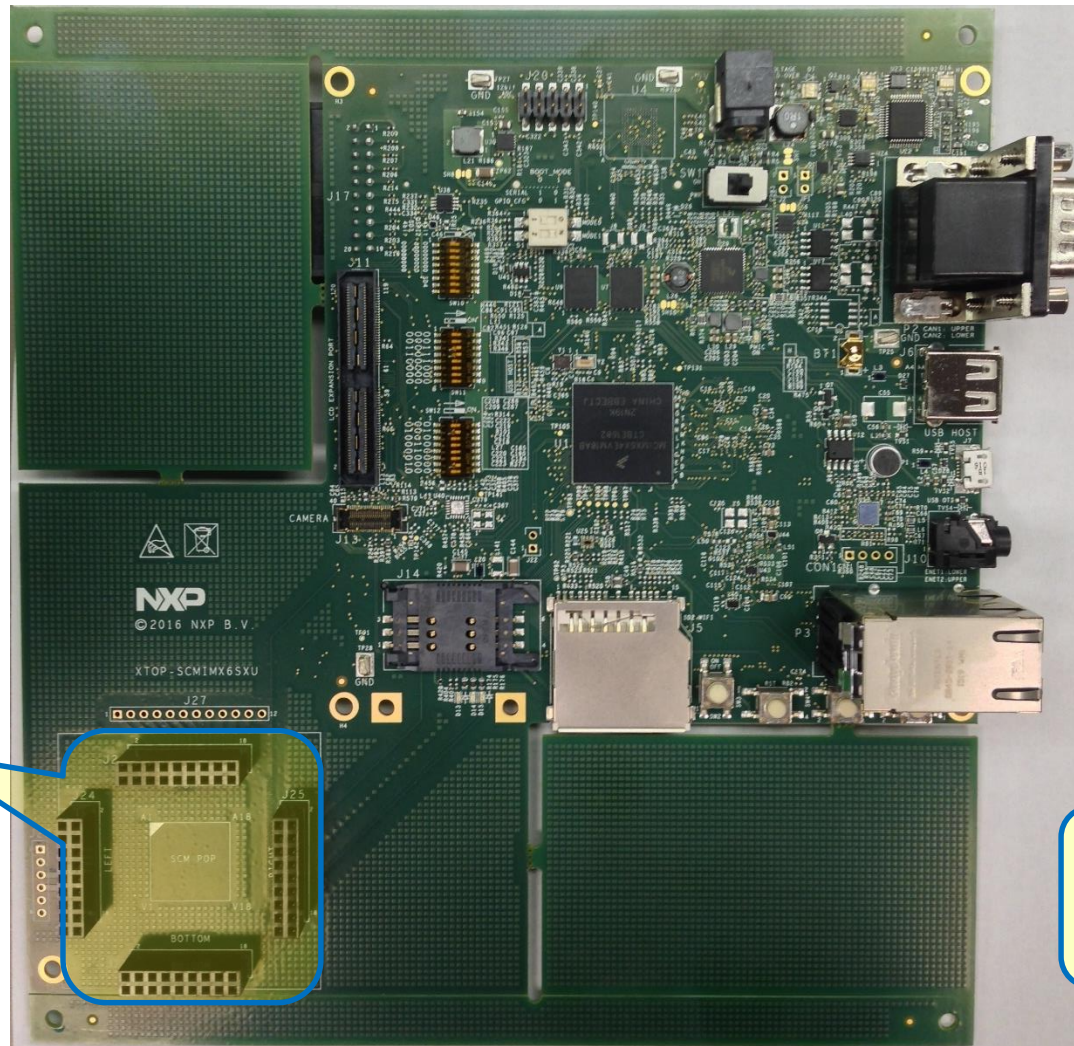


- **67.9% reduction** in board area by utilizing the NXP Base SCM (i.MX 6SX + PMIC + Memory + Discretes)
- **69.2% reduction** in board area by utilizing the SCM Top Board for the WiFi + BT + Discrete module)

Customer Engagement

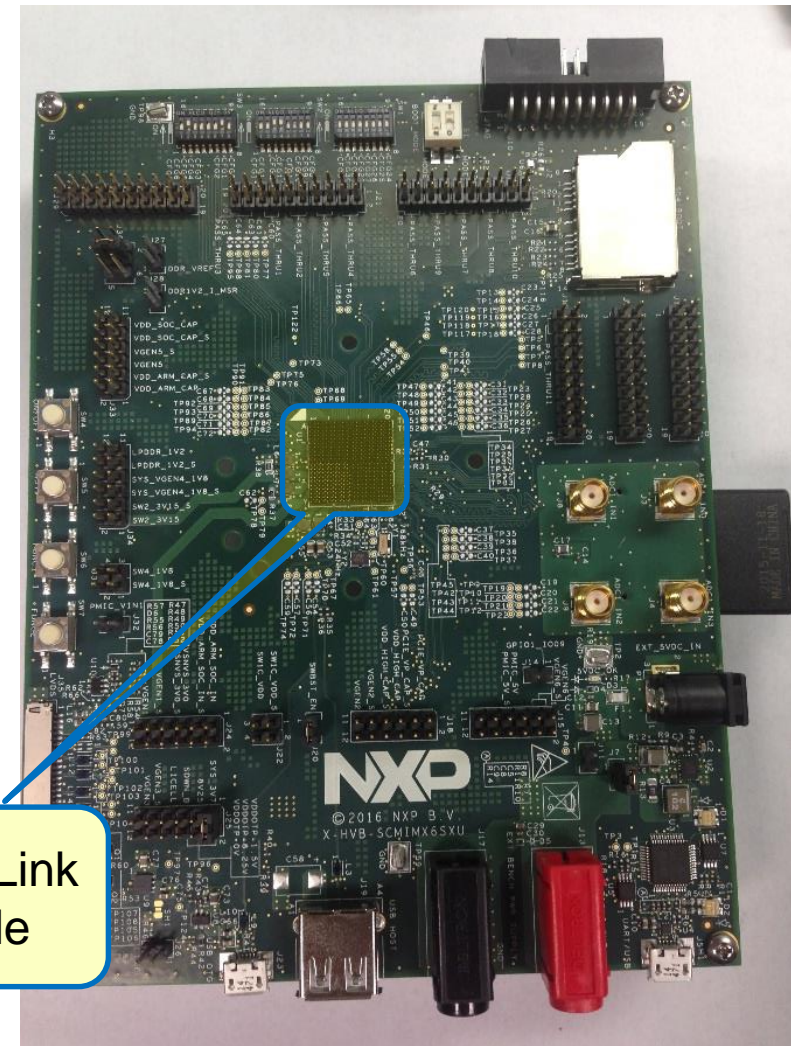
Top Board Software Developer

- Alpha samples available
- ECO-Partner support in place
- Development boards available



Customer Top Board Slot

HVB SCM V-Link Development Board



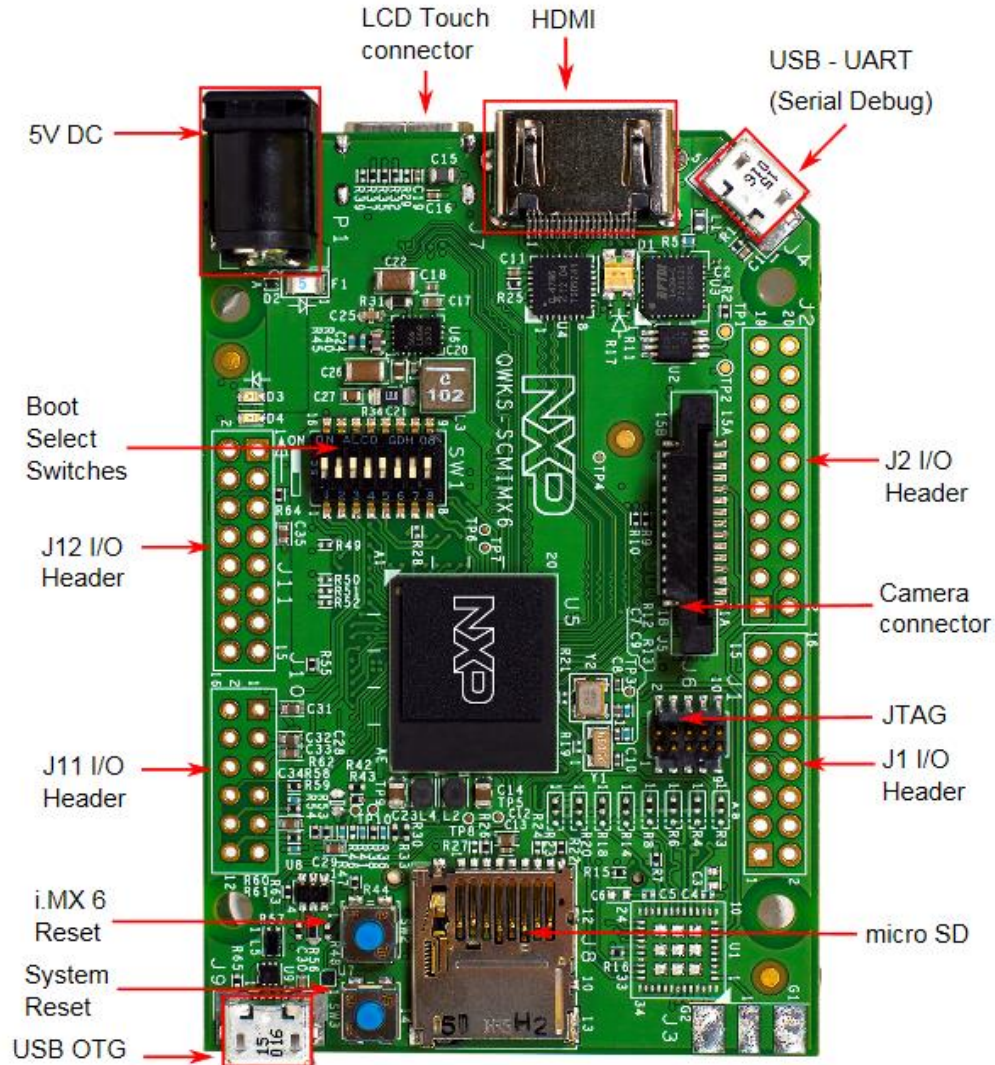
SCM V-Link Module

SCM-i.MX 6DQ QUICK START BOARD FEATURES



SCM-i.MX 6Dual/6Quad Quick Start Board

Available
NOW



- SCM-i.MX6D (1GB LPDDR2 + PMIC PF0100 + 16MB SPI NOR)
- Small form-factor 2.1" x 3.2"
- Micro-SD card socket
- Standard SD card socket
- HDMI connector
- JTAG (10 pin)
- USB (UART to USB serial debug)
- USB device mode
- MIPI Camera connector (compatible with Raspberry Pi 2 camera module)
- LVDS display (w/ cap. touch) connector (compatible with Element14 9.7" LCD display with mini-HDMI connection)
- Wi-Fi available via SDIO interface* (compatible with Murata SD module)
- Arduino R.3 header compatible (no ADC)
 - AUDMUX, SPDIF, ENET (10/100), SPI, UART muxed with Arduino headers

SCM-i.MX 6Dual/6Quad Quick Start Board

The following third-party accessory boards have been tested with the QWKS-SCM i.MX6 Dual/6Quad and may be available

Part Numbers	Resale	Description	Ordering Link
QWKS-SCMIMX6DQ	\$249	SCM-i.MX6DQ Development Board	www.arrow.com , or www.nxp.com (Buy Direct)
QWKS-ETHACC	TBD	10/100 Ethernet and MCIMX-LVDS1 display support	TBD – available early 2Q16
17X8440	\$199	9.7” TFT LVDS display w/ cap touch	www.newark.com Manufacturer: ELEMENT14 Manufacturer PN: LCD8000-97C
LBEH5HMZPC-TEMP-DS-SD	\$132.05	WLAN+BT combo SD eval module, 802.11ac/a/b/g/n Bluetooth v4.1	www.arrow.com Manufacturer: Murata *BT connection not supported on QS board
81-LBEH5HMZPCTMPDSSD	\$125	WLAN+BT combo SD eval module, 802.11ac/a/b/g/n Bluetooth v4.1	www.newark.com Manufacturer: Murata Manufacturer PN: LBEH5HMZPC-TEMP-DS-SD *BT connection not supported on QS board
SX-SDCAN-2830-SP	\$55.56	WLAN+BT combo SD eval module, 802.11a/b/g/n Bluetooth v3.0 + HS/Bluetooth v4.0(BLE) Class 1.5	www.arrow.com Manufacturer: Silex Technology America *BT connection not supported on Quick Start board

Software Enablement

Fully validated Linux and Android BSP releases



Linux



ANDROID

Integrated with Yocto



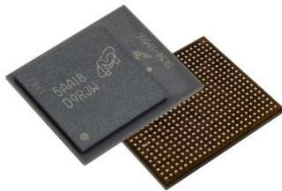
Board Support Package (BSP)
Aligned to official **i.MX 6** releases

Tools and Support Model

SCM Product

NXP

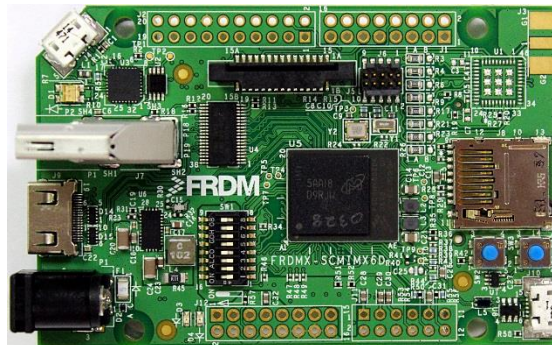
- SCM Design
- Supply Chain
- SCM Assembly
- SCM Test
- SCM Quality
- Software Enablement



SCM Sales and Application Support

NXP and Arrow

- Sales
- Field Application Engineering Support
- Evaluation Boards
- Product Collateral
- Community Support



Post Sale Enablement

Ecosystem

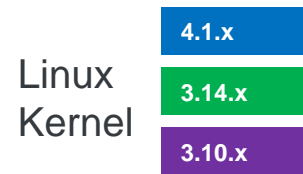
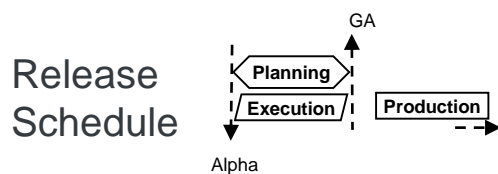
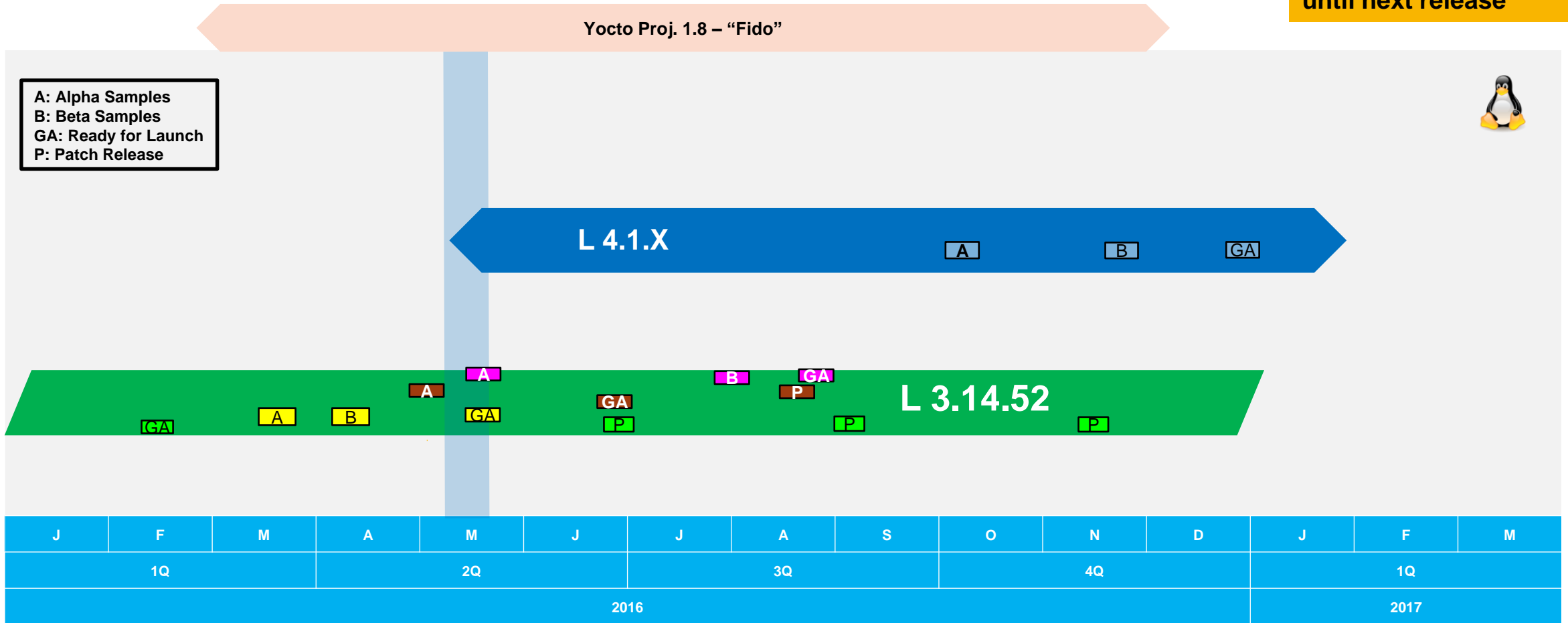
- PoP Assembly Support
- Software/ Firmware/ Application Enhancement Support
- Hardware Support (Customer Board, Enhancements, Implementation)
- Community Support

SOFTWARE RELEASE PROCESS



Linux Roadmap

GA – Support for 1 year from date of release
Alpha/Beta – Support until next release



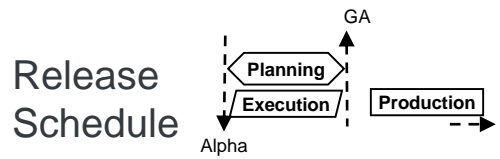
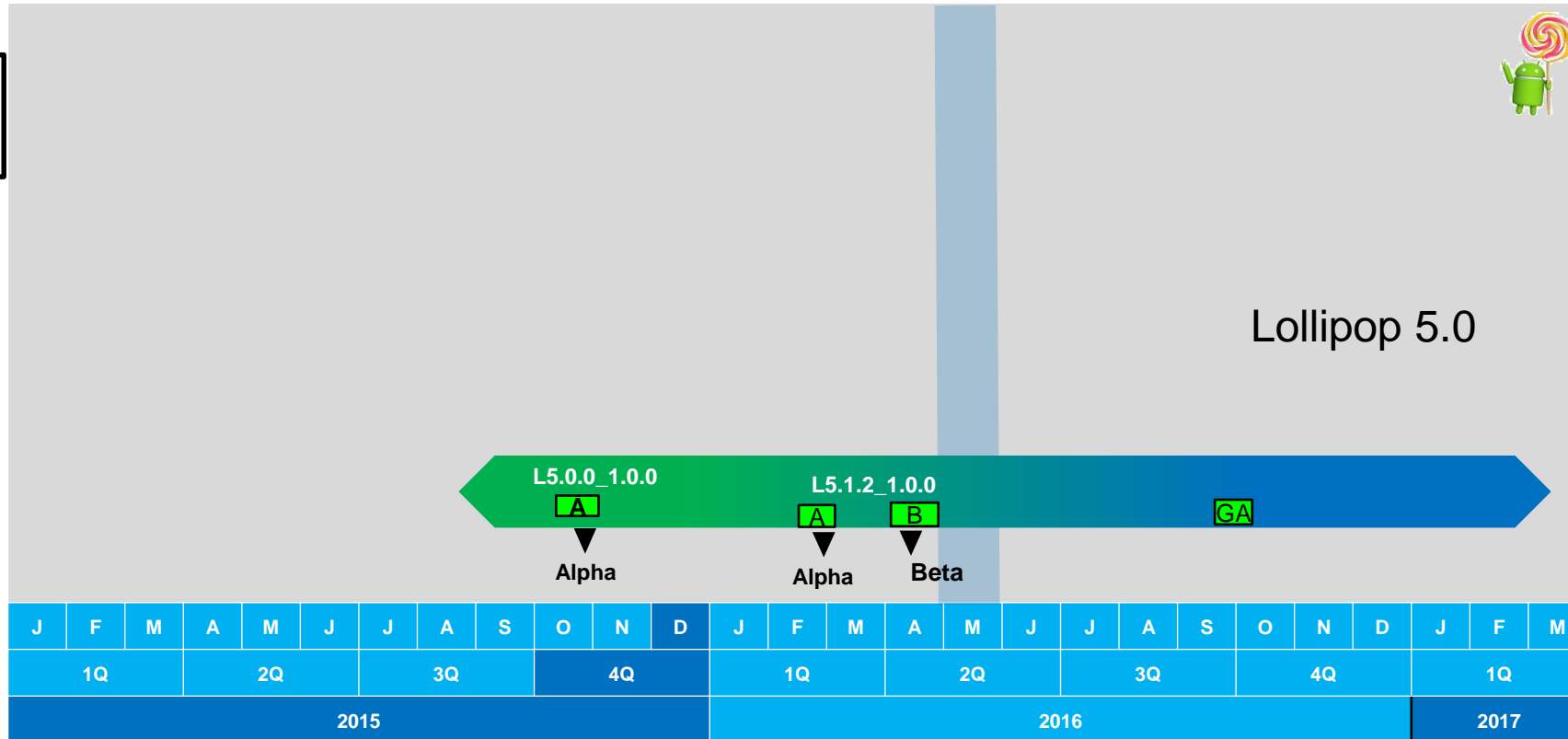
- Supported Platforms**
- SCM-i.MX 7 EVB Board
 - SCM-i.MX 6SX EVB Board
 - SCM-i.MX 6D/Q-1G Quick Start Board
 - SCM-i.MX 6D/Q-ePOP Quick Start Board
 - SCM-i.MX 6SX V-link EVB Board



Android Roadmap

GA – Support for 1 year from date of release
Alpha/Beta – Support until next release

A: Alpha Samples
 B: Beta Samples
 GA: Ready for Launch
 P: Patch Release



Linux Kernel

- 3.10.x
- 3.14.x
- 4.1.x

Supported Platforms

- SCM-i.MX 6D/Q-1G Quick Start Board



HANDS-ON TRAINING



SCM-i.MX 6D/Q Hands-On Training – Getting Started

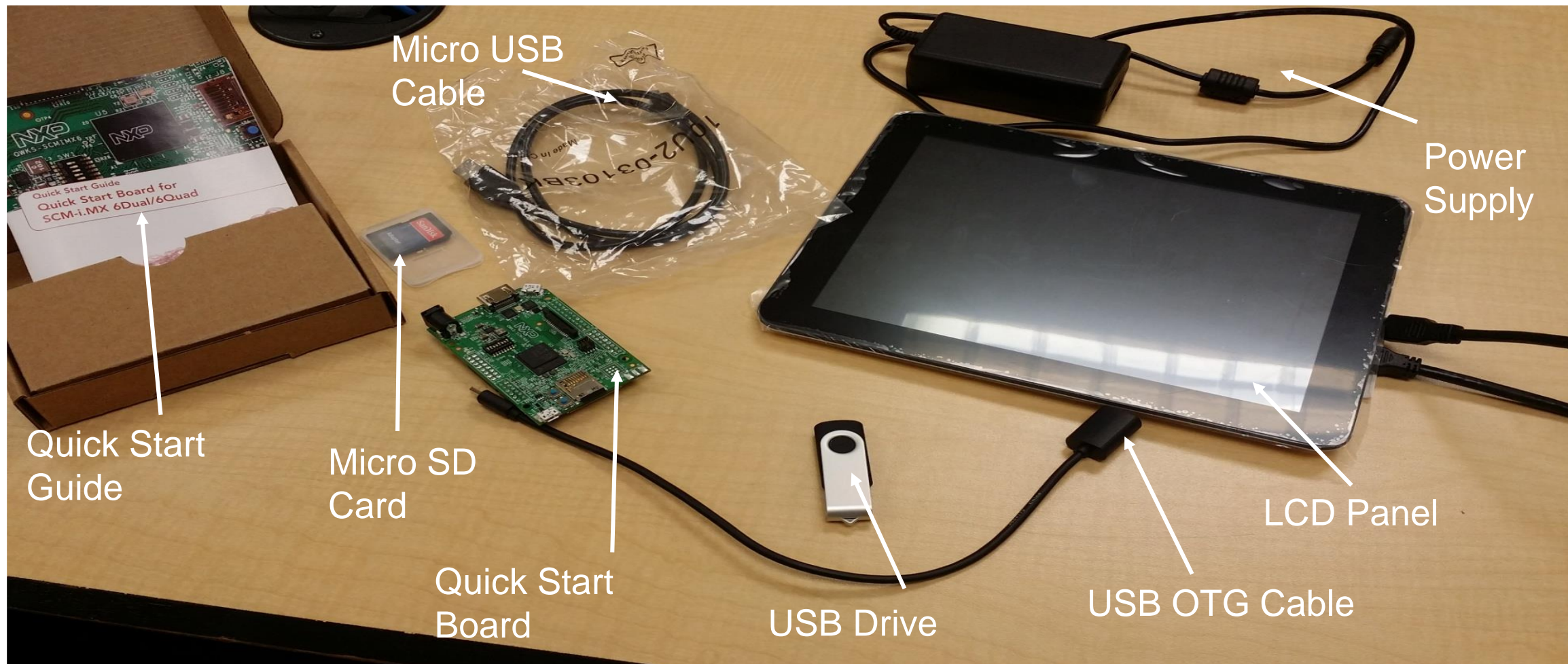
Hardware

- Laptop/PC
- Quick Start Board Kit (power supply, micro-USB cable...)
- LVDS Display
- USB Stick

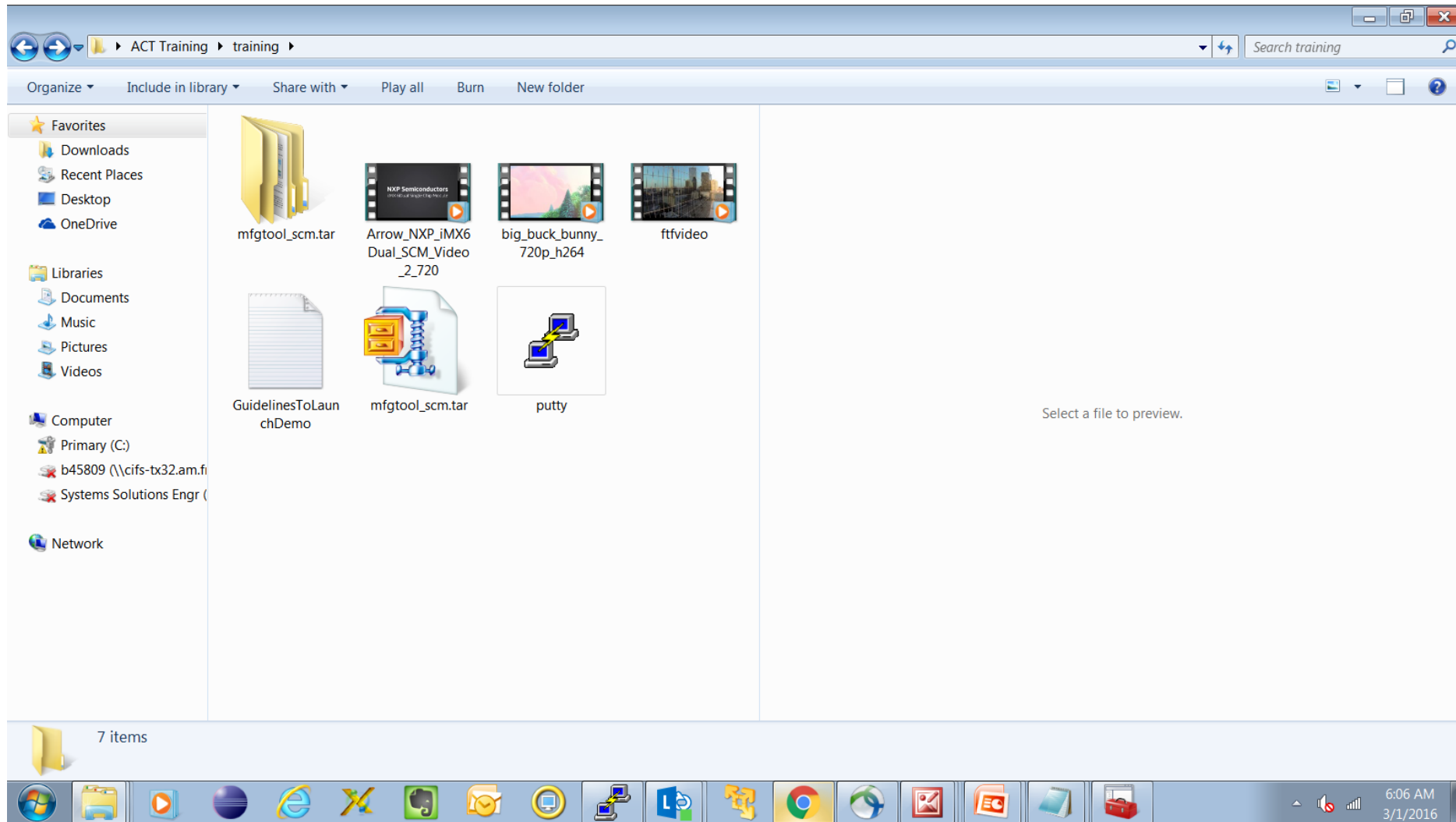
Software

- TeraTerm or Putty
- Demo image on a Micro-SD Card

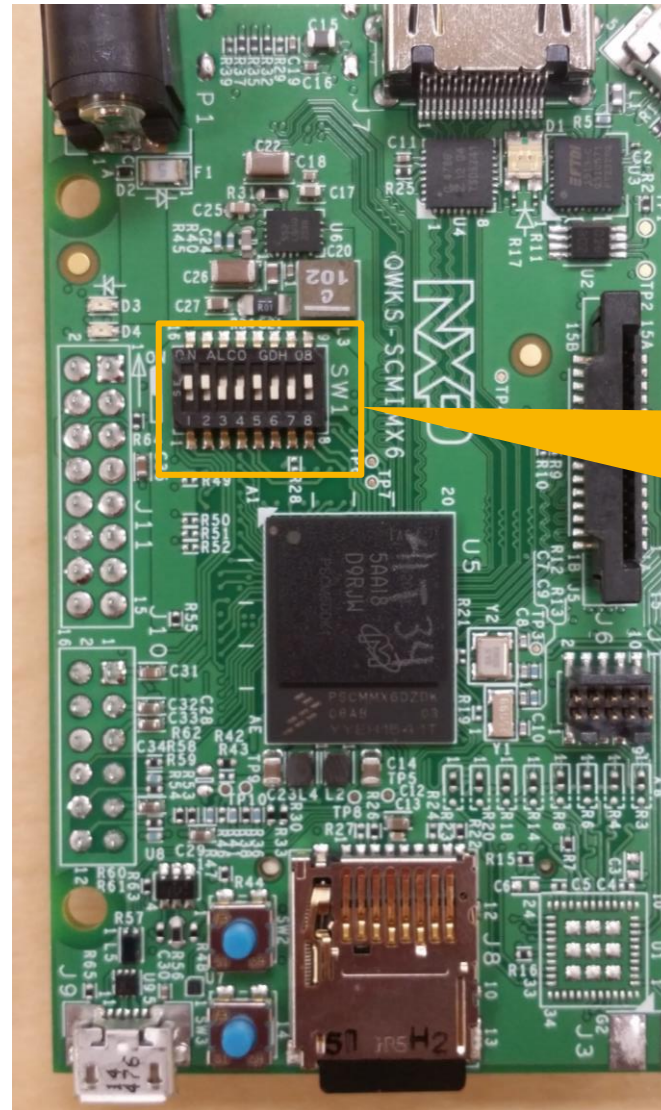
Before We Start...



Before We Start... (Inside USB Drive)



1. Get to Know the Quick Start Board

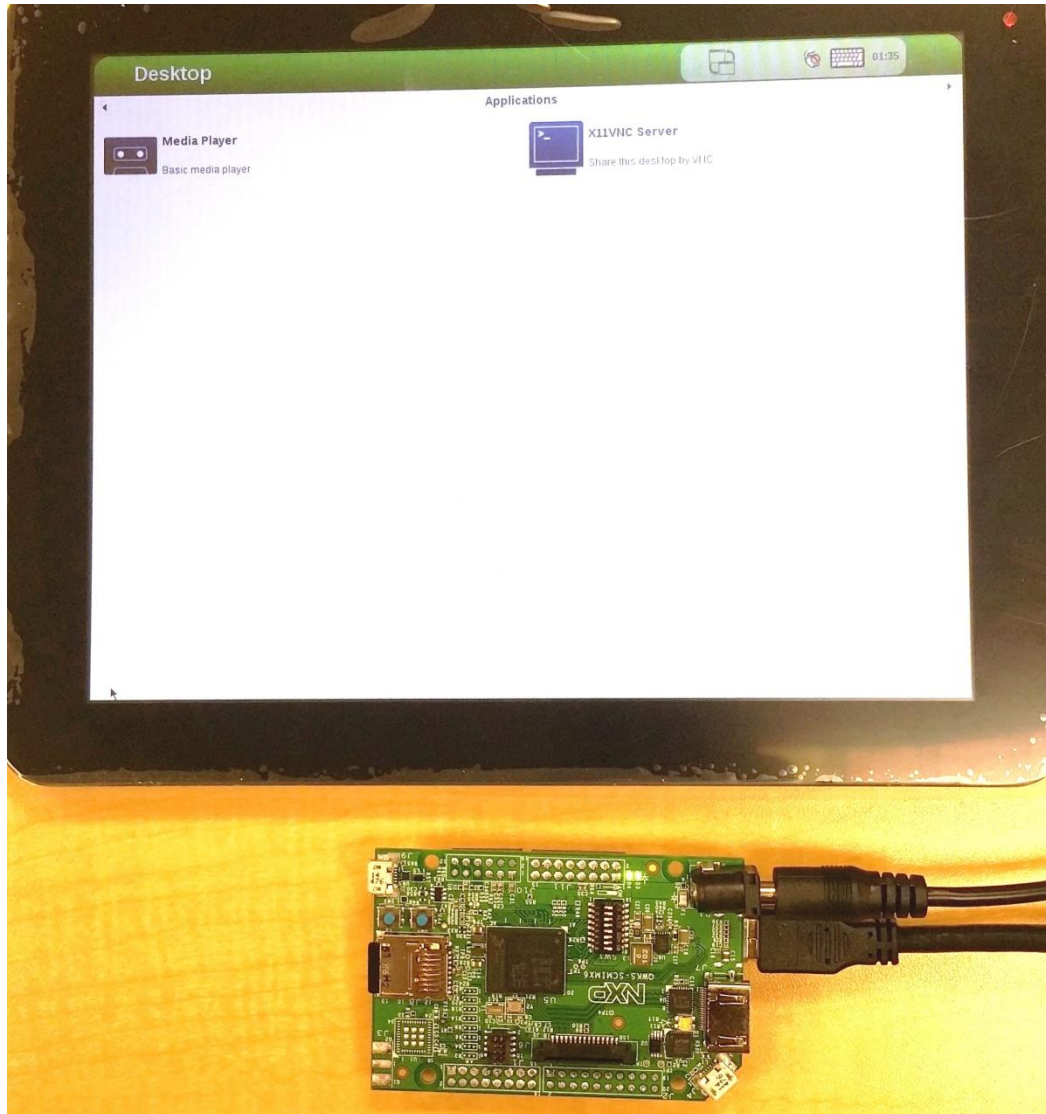


Look at the boot switch settings, the default setting boots from the micro SD card

1. Get to Know the Quick Start Board

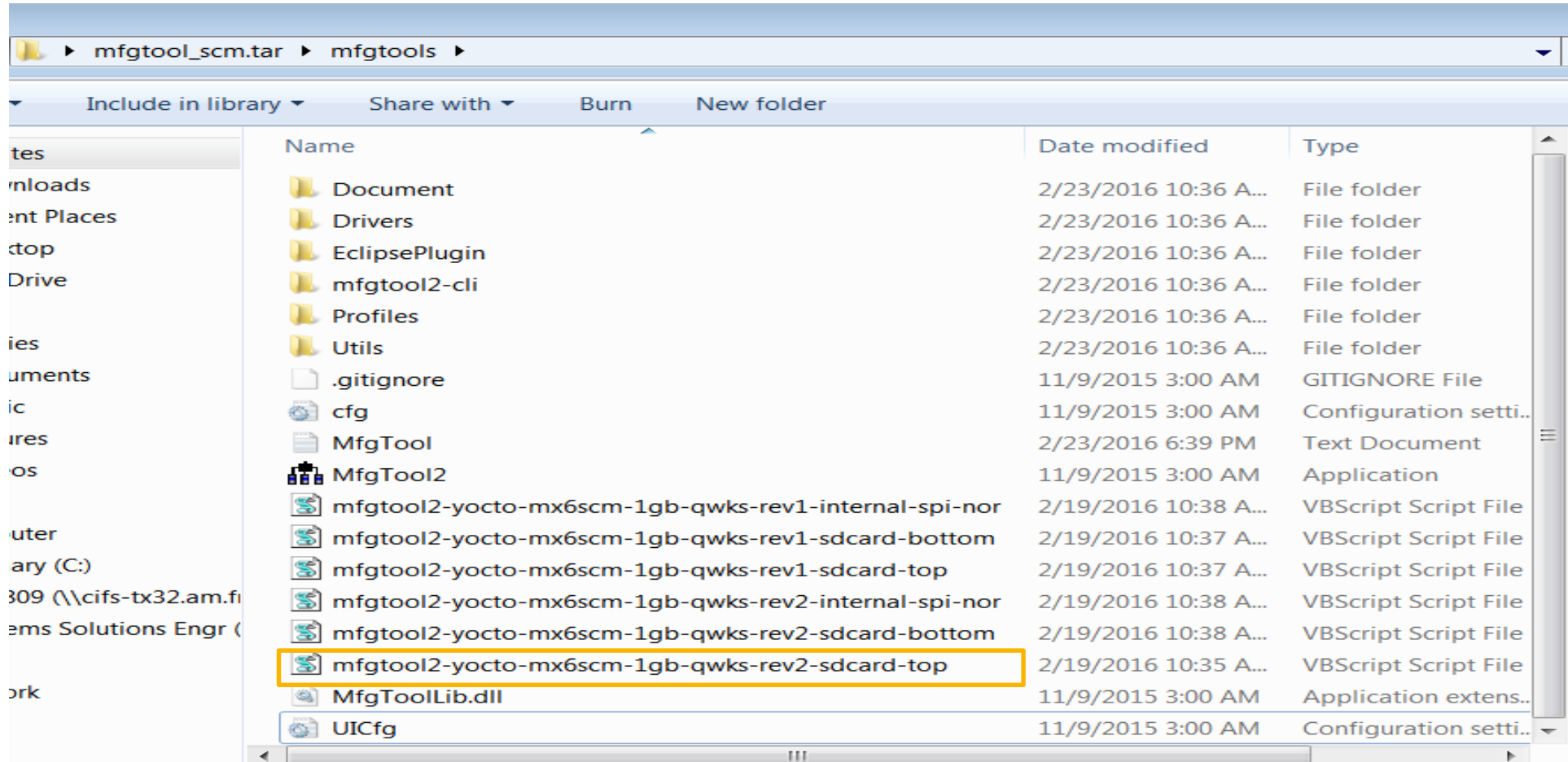
SW1								
DIP#	8	7	6	5	4	3	2	1
	BOOT_CFG1_ [6]	BOOT_CFG1_ [5]	BOOT_CFG1_ [4]	BOOT_CFG2_ [4]	BOOT_CFG2_ [3]	BOOT_CFG3_ [5]	BOOT_CFG3_ [4]	BOOT_MODE1
SPI NOR	0	1	1	x	x	DDR Memory Map default config		0 = Boot from Fuses
SD/ESD	1	0	x	0 = SD2	1 = SD2	'00' – Single DDR Channel		
				1 = SD3	0 = SD3	'01' – Fixed 2 x 32 map		1 = Boot from Board settings
						'10' – 4 KB Interleaving Enabled		
						'11' – Illegal		
DEFAULT	1	0	0	1	0	1	0	1

Power Up The Board



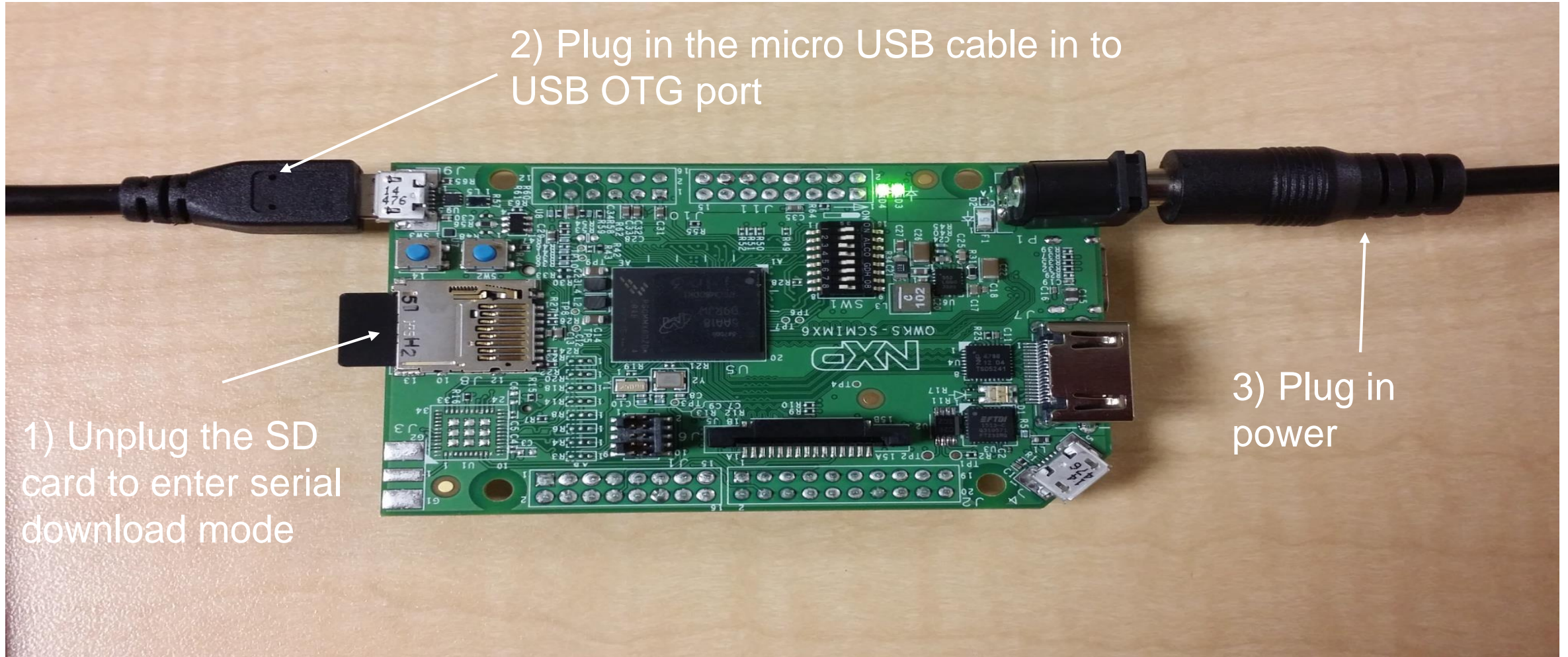
Plug in the power and mini HDMI cable from the panel to the board, you should see the Yocto environment booting on the panel

How To Load the Image On To SD Card Using MFG Tool

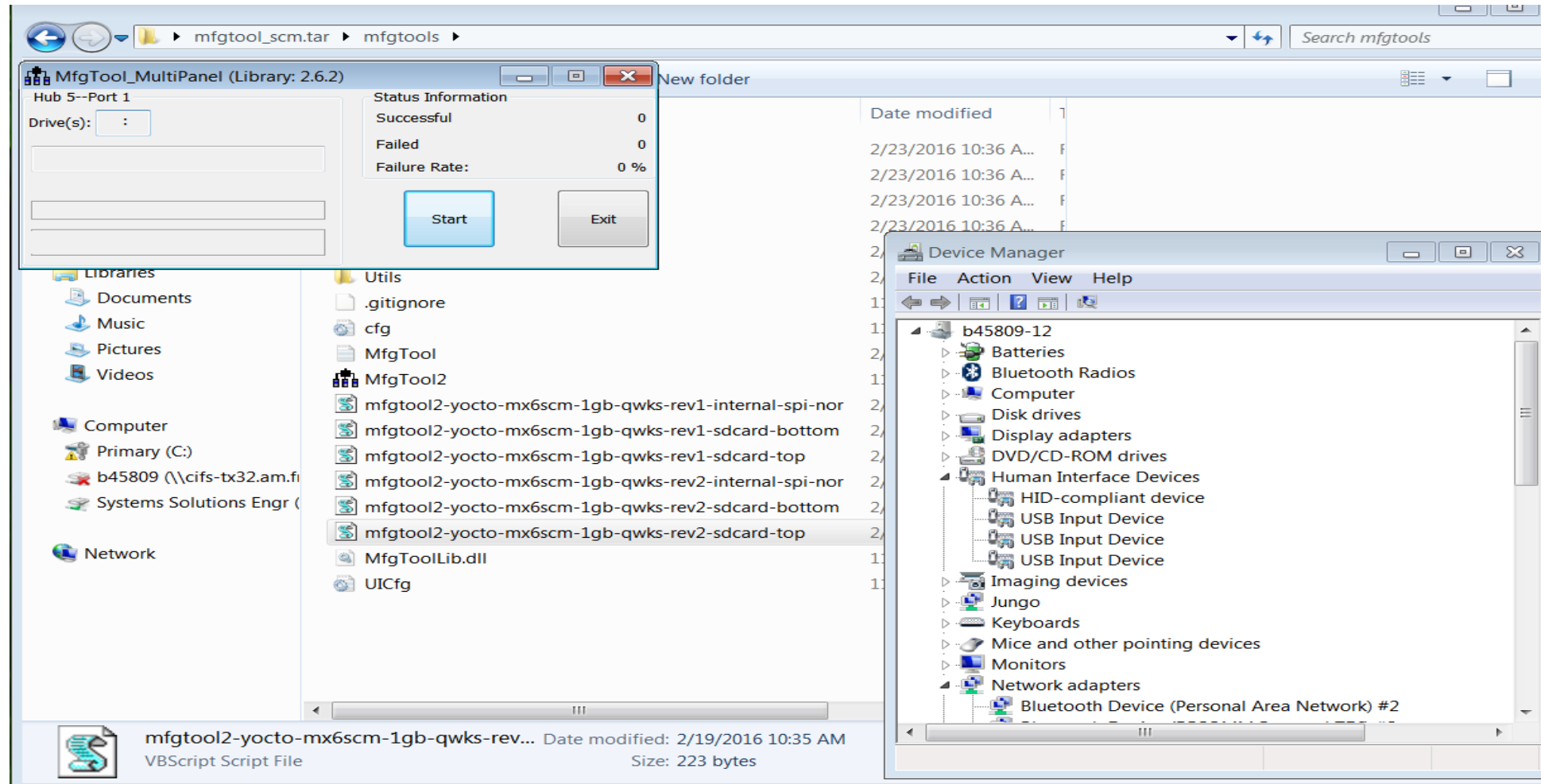


How To Load Image Onto SD Card Using MFG Tool

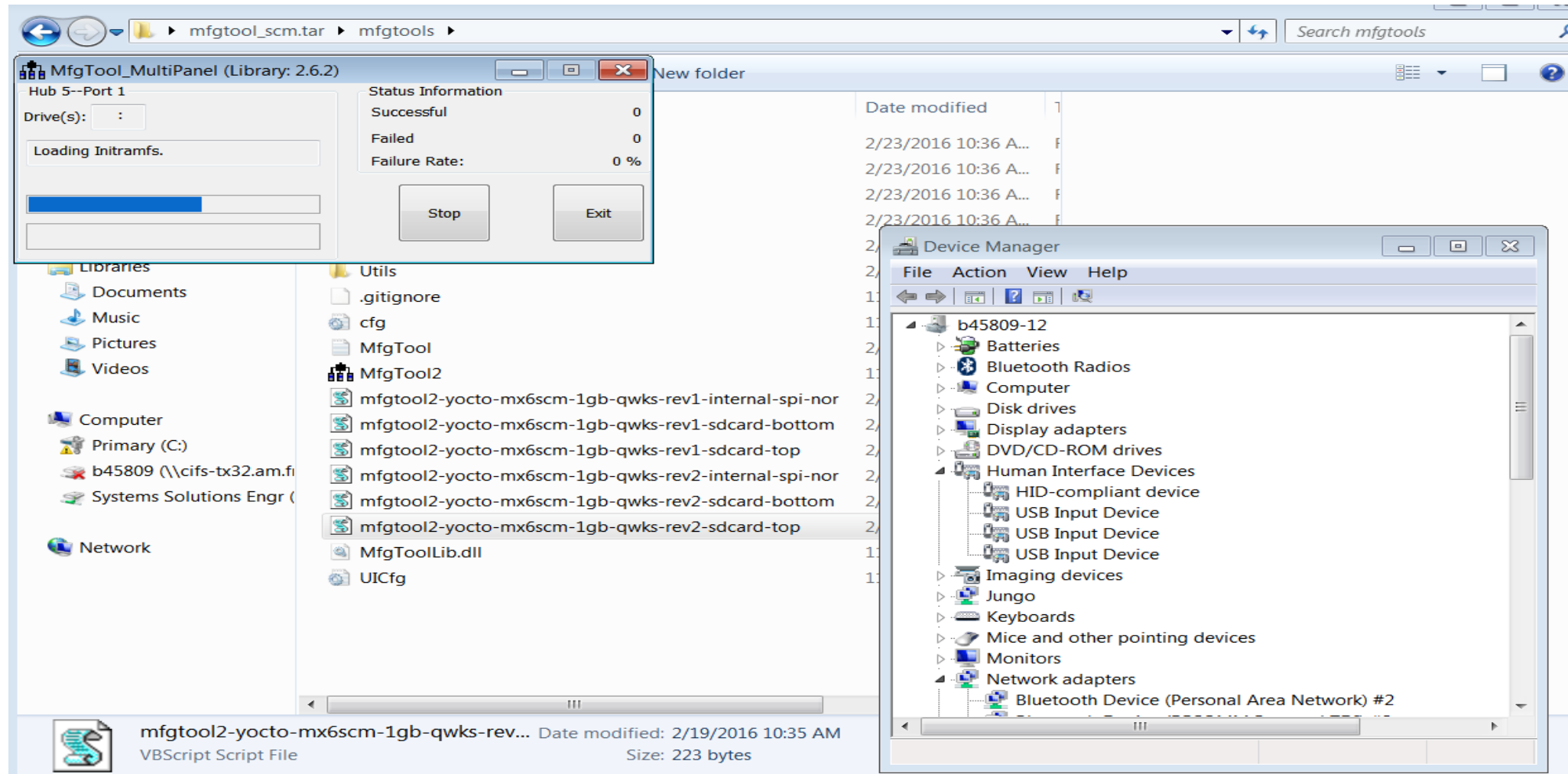
(Hardware Setup)



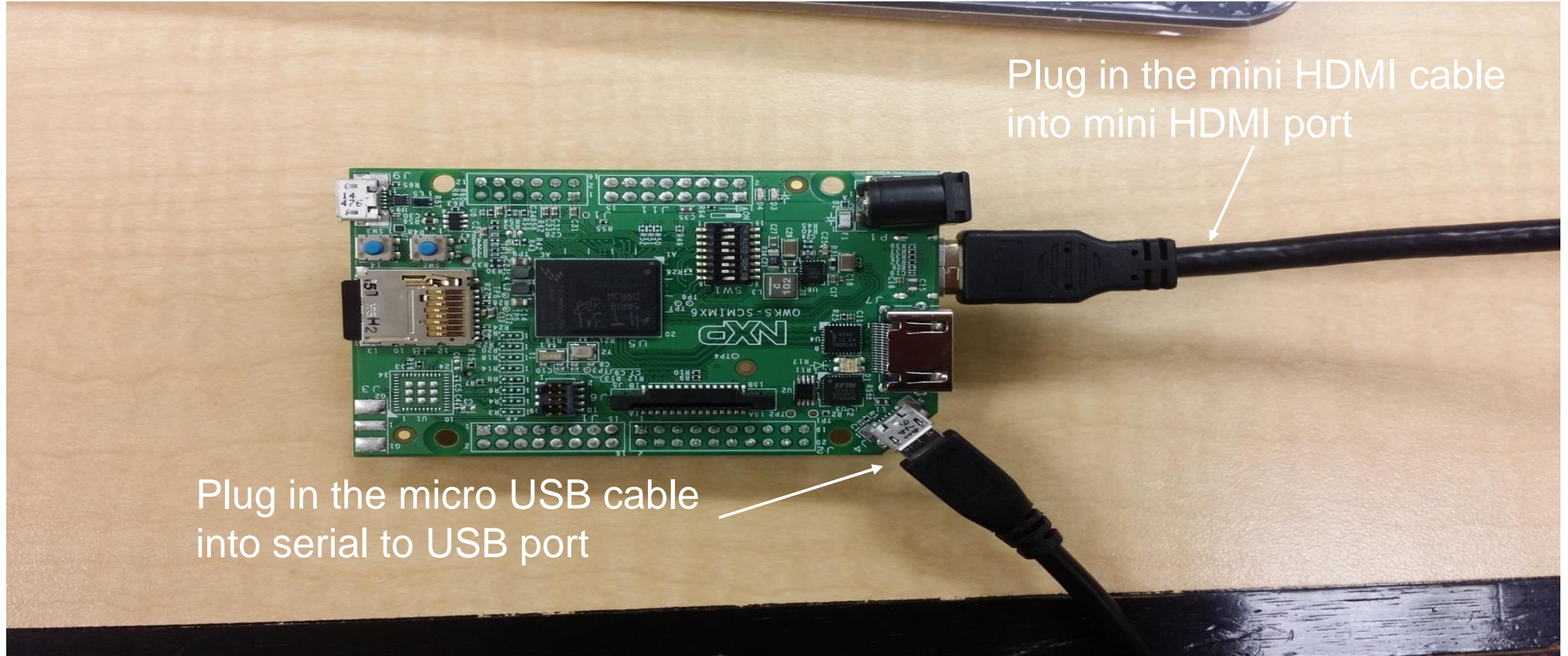
How To Load the Image Onto SD Card Using MFG Tool



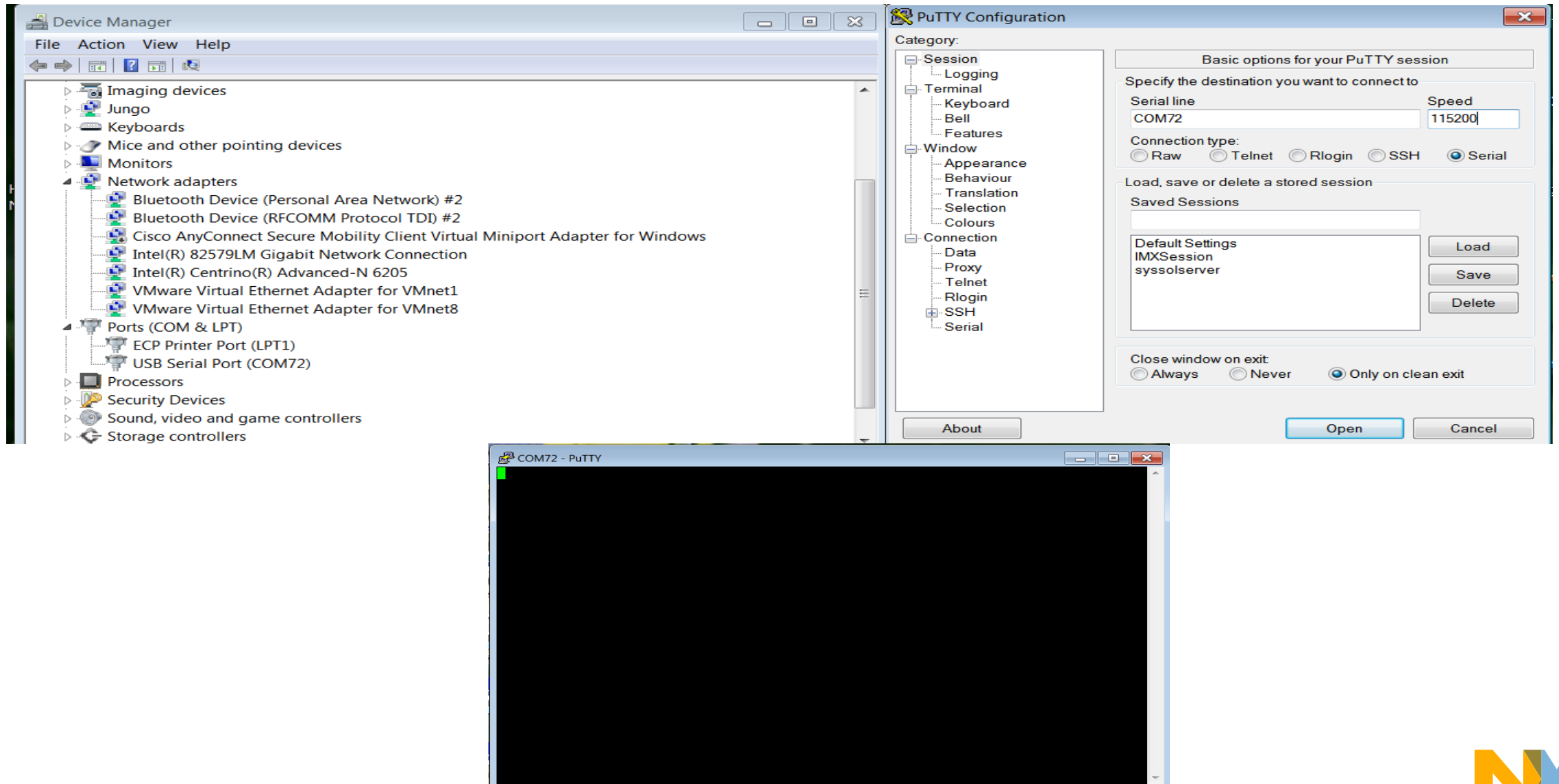
How To Load The Image Onto SD Card Using MFG Tool



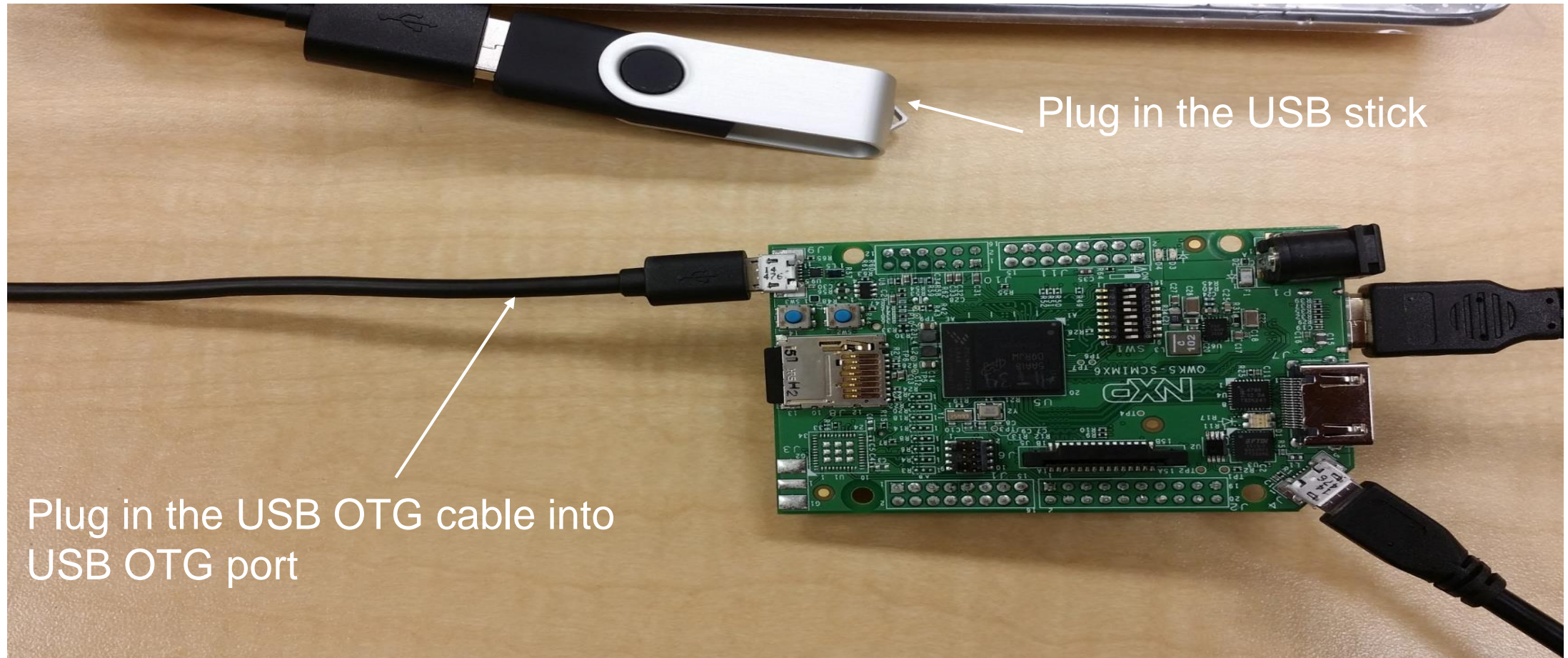
2. Board Set Up for Running Demo (Hardware)



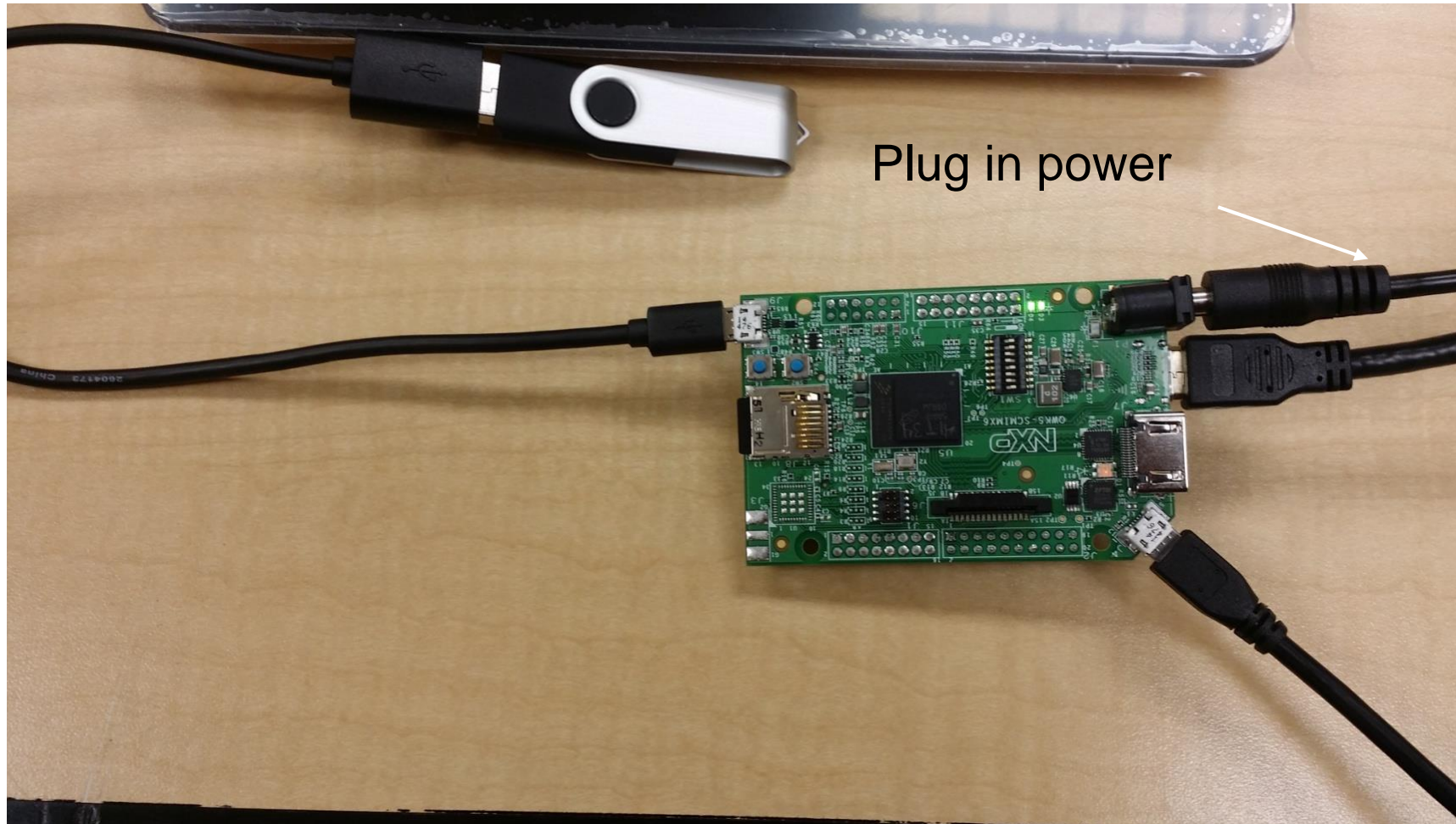
2. Board Set Up (open Putty or TeraTerm)



3. Board Set Up for Running Demo



4. Board Set Up for Running Demo

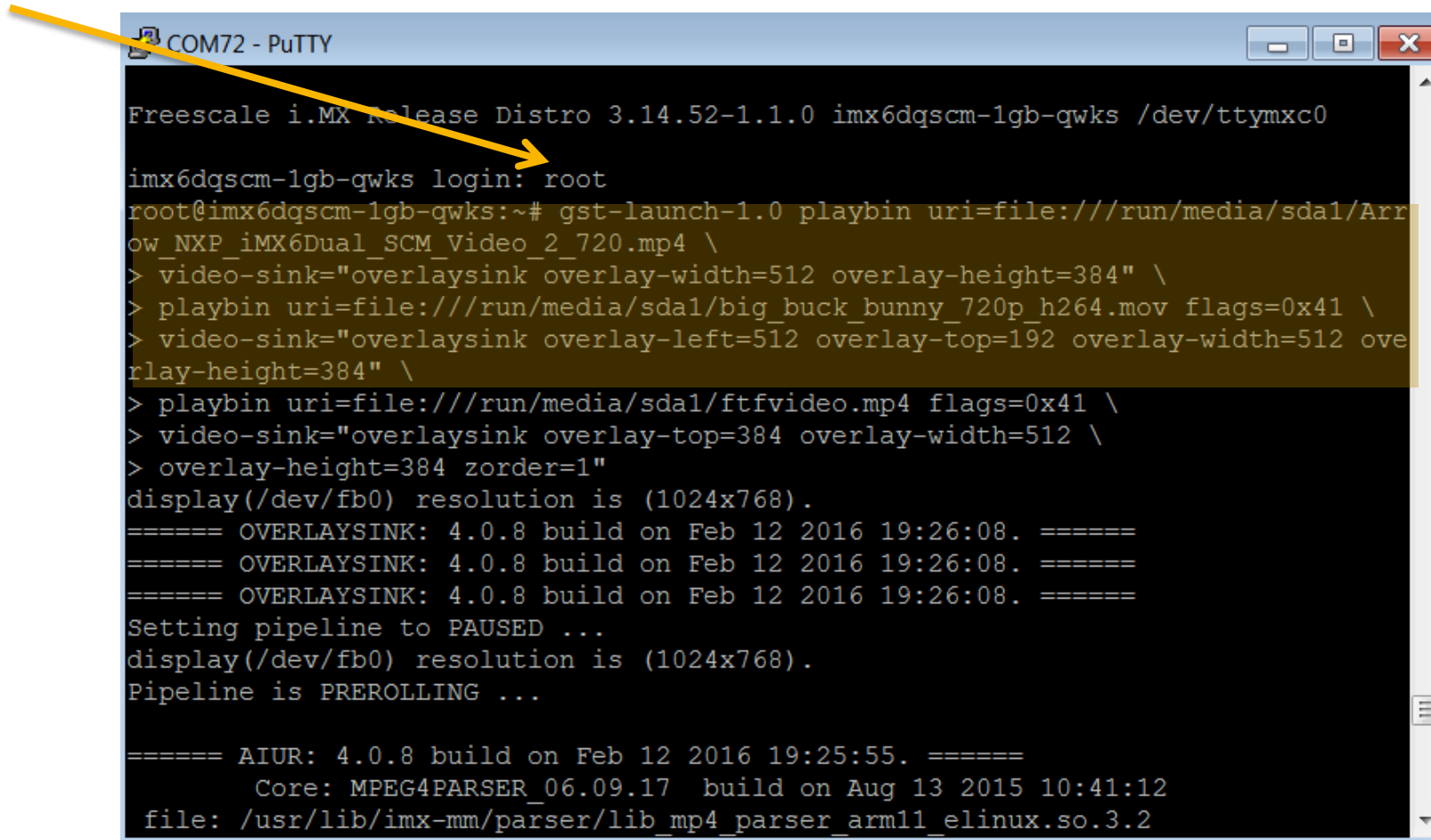


Board Set Up for Running the Demo



3. Run the Demo

Enter the command to run the multimedia demo



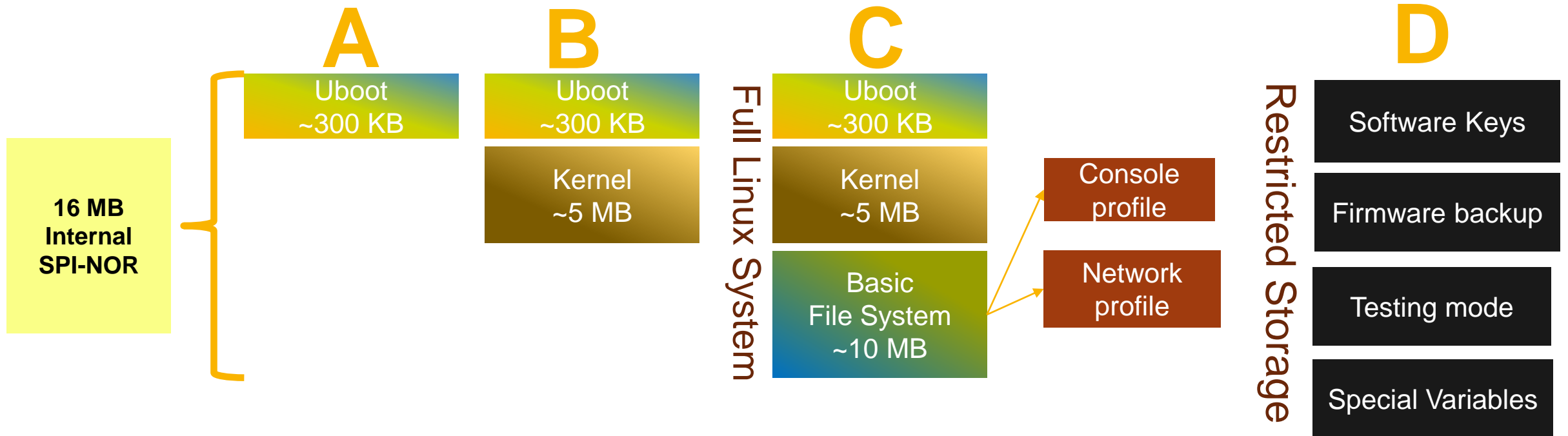
```
COM72 - PuTTY
Freescale i.MX Release Distro 3.14.52-1.1.0 imx6dqscm-1gb-qwks /dev/ttymx0
imx6dqscm-1gb-qwks login: root
root@imx6dqscm-1gb-qwks:~# gst-launch-1.0 playbin uri=file:///run/media/sda1/Arr
ow_NXP_iMX6Dual_SCM_Video_2_720.mp4 \
> video-sink="overlaysink overlay-width=512 overlay-height=384" \
> playbin uri=file:///run/media/sda1/big_buck_bunny_720p_h264.mov flags=0x41 \
> video-sink="overlaysink overlay-left=512 overlay-top=192 overlay-width=512 ove
rlay-height=384" \
> playbin uri=file:///run/media/sda1/ftfvideo.mp4 flags=0x41 \
> video-sink="overlaysink overlay-top=384 overlay-width=512 \
> overlay-height=384 zorder=1"
display(/dev/fb0) resolution is (1024x768).
===== OVERLAYSINK: 4.0.8 build on Feb 12 2016 19:26:08. =====
===== OVERLAYSINK: 4.0.8 build on Feb 12 2016 19:26:08. =====
===== OVERLAYSINK: 4.0.8 build on Feb 12 2016 19:26:08. =====
Setting pipeline to PAUSED ...
display(/dev/fb0) resolution is (1024x768).
Pipeline is PREROLLING ...

===== AIUR: 4.0.8 build on Feb 12 2016 19:25:55. =====
Core: MPEG4PARSER_06.09.17 build on Aug 13 2015 10:41:12
file: /usr/lib/imx-mm/parser/lib_mp4_parser_arm11_elflinux.so.3.2
```

3. Run the Demo



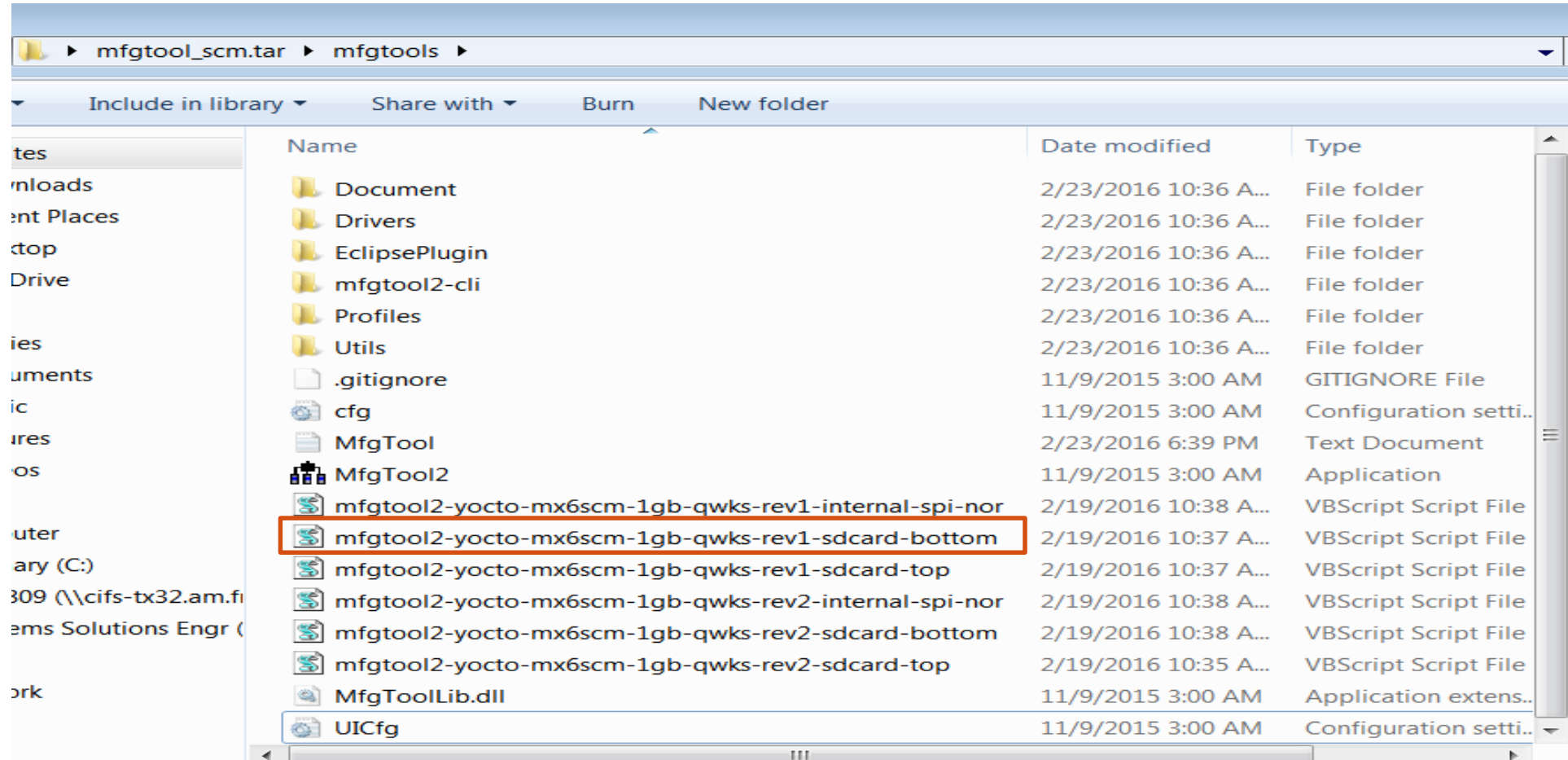
Advantages of SPI-NOR Flash



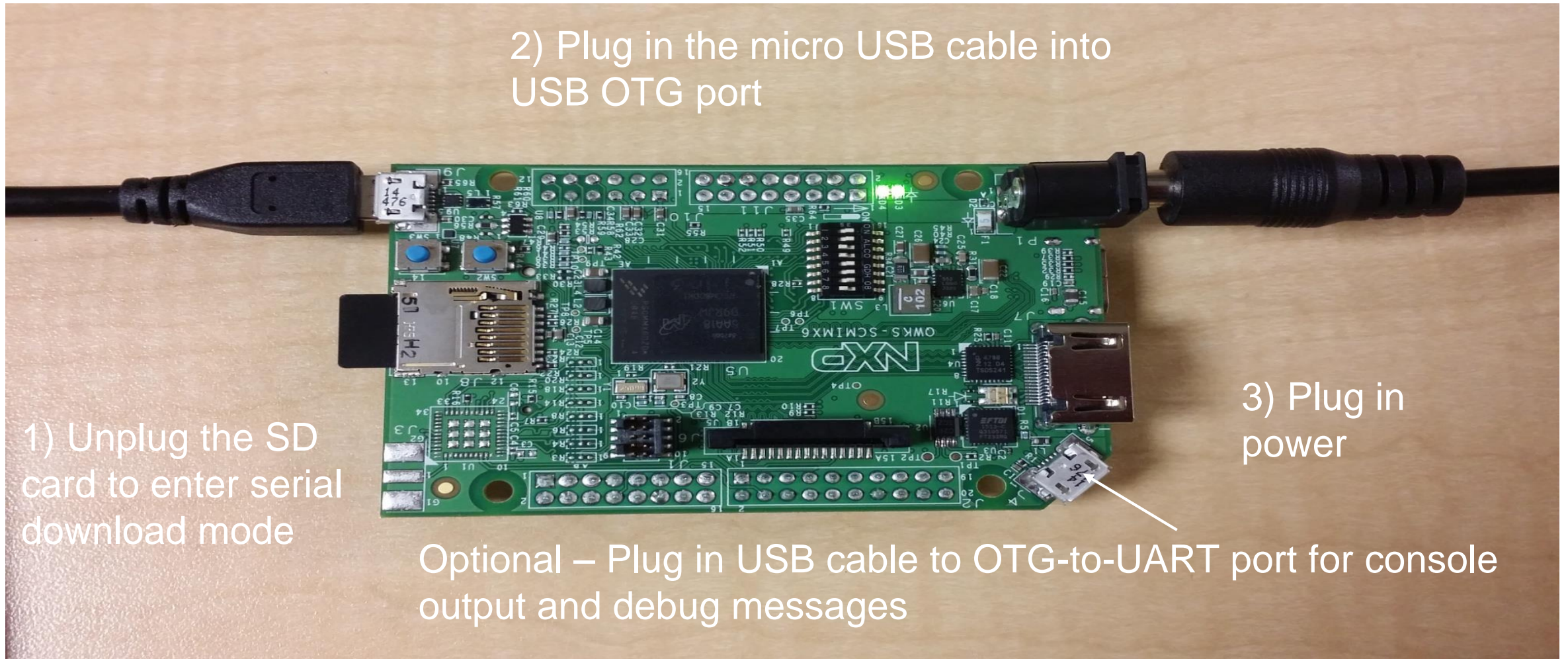
- Fully validated Linux and Android BSP releases will be supported on the SCM platform. This support will be aligned with official i.MX releases.
- Standard configurations can be structured using external NVMs such as eMMC, NAND, SD, SATA, etc.

- LPDDR2 configuration (uBoot & Kernel)
- PFUZE voltage rails to meet SCM requirements (uBoot & Kernel)
- SPI-NOR driver support added (uBoot & kernel)

How to Boot from the Internal SPI-NOR Flash



How to Boot from the Internal SPI-NOR Flash (Hardware)



How to Boot from the Internal SPI-NOR Flash (Software)

The image shows a Windows desktop environment with three overlapping windows:

- Windows Explorer:** Displays the file system path `mfgtool_scm.tar > mfgtools`. The file list includes folders like `Document`, `Drivers`, `EclipsePlugin`, `mfgtool2-cli`, `Profiles`, `Utils` and files like `.gitignore`, `cfg`, `MfgTool`, `MfgTool2`, and various `mfgtool2-yocto-mx6scm-1gb-qwks-...` files. The file `mfgtool2-yocto-mx6scm-1gb-qwks-rev2-internal-spi-nor` is selected.
- MfgTool_MultiPanel (Library: 2.6.2):** A dialog box titled "Hub 5--Port 2" with a "Drive(s):" field containing a vertical bar. Below it is a field labeled "HID-compliant device". To the right, a "Status Information" panel shows "Successful: 0", "Failed: 0", and "Failure Rate: 0 %". There are "Start" and "Exit" buttons.
- Device Manager:** Shows the hardware tree for device ID `b45809-12`. The "Human Interface Devices" category is expanded, and the "HID-compliant device" is highlighted with a red arrow.

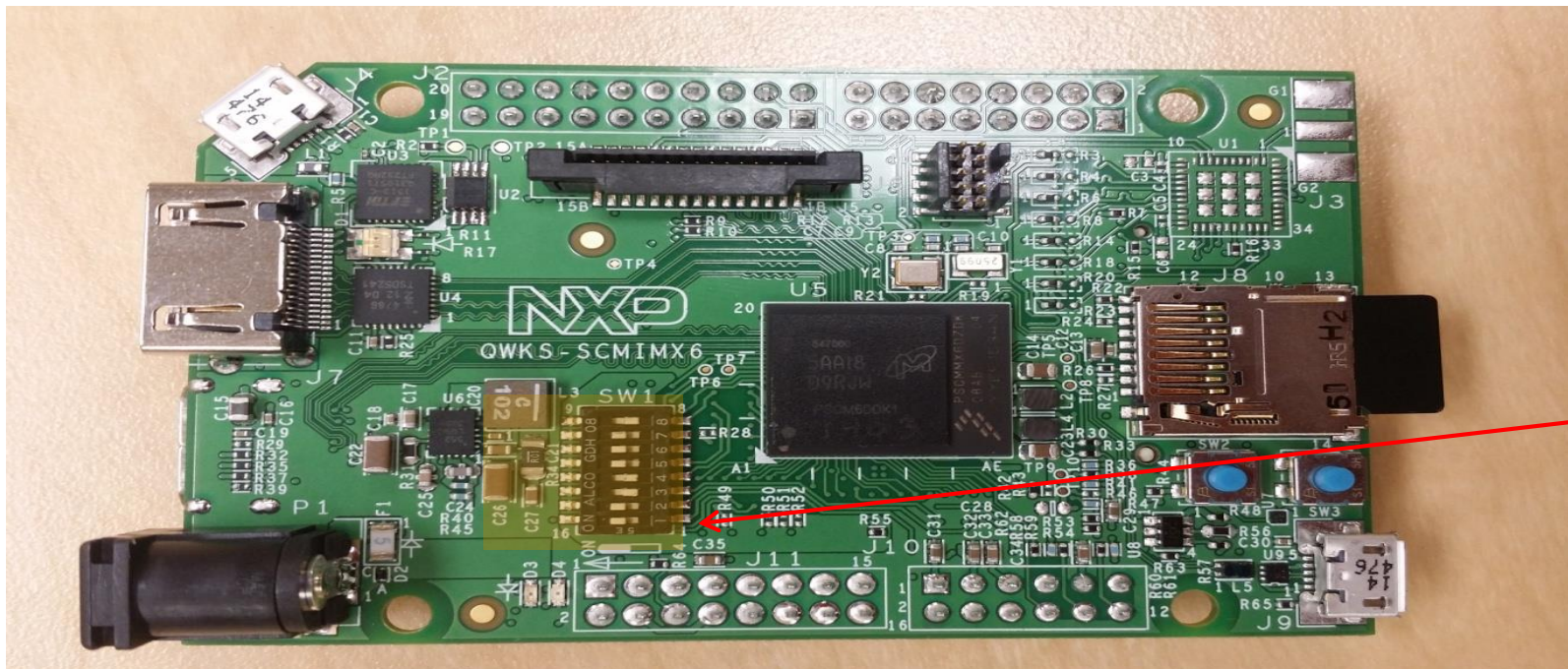
Red arrows indicate the relationship between the selected file in Explorer, the "HID-compliant device" field in MfgTool, and the "HID-compliant device" in Device Manager.

How to Boot from the Internal SPI-NOR Flash

The screenshot shows a Windows file explorer window displaying a directory of files related to the MfgTool2 application. The files include folders like Document, Drivers, EclipsePlugin, mfgtool2-cli, Profiles, Utils, and .gitignore, as well as files like .gitignore, cfg, MfgTool, MfgTool2, and various mfgtool2-yocto-mx6scm-1gb-qwks-... files. A red overlay highlights the MfgTool2 application window, which shows a progress bar and status information: Successful: 1, Failed: 0, Failure Rate: 0.00%. Below the progress bar are buttons for Stop and Exit. A Device Manager window is also open, showing a list of hardware devices under the category b45809-12, including Batteries, Bluetooth Radios, Computer, Disk drives, Display adapters, DVD/CD-ROM drives, Human Interface Devices, USB Input Device, Imaging devices, Jungo, Keyboards, Mice and other pointing devices, Monitors, and Network adapters. A Microsoft Windows dialog box is open in the foreground, displaying the message: "You need to format the disk in drive E: before you can use it. Do you want to format it?" with buttons for Format disk and Cancel.

How to Boot from the Internal SPI-NOR Flash

SW1								
DIP#	8	7	6	5	4	3	2	1
	BOOT_CFG1_ [6]	BOOT_CFG1_ [5]	BOOT_CFG1_ [4]	BOOT_CFG2_ [4]	BOOT_CFG2_ [3]	BOOT_CFG3_ [5]	BOOT_CFG3_ [4]	BOOT_MODE1
SPI NOR	0	1	1	x	x	DDR Memory Map default config		0 = Boot



Change the boot switch settings from SD card to SPI NOR

How to Boot from the Internal SPI-NOR Flash

The image displays a Windows desktop environment with several windows open:

- File Explorer:** Shows the directory path `mfgtool_scm.tar > mfgtools`.
- PuTTY Configuration:** A dialog box for configuring a PuTTY session. The 'Category' list on the left includes Session, Logging, Terminal, Keyboard, Bell, Features, Window, Appearance, Behaviour, Translation, Selection, Colours, and Connection. The 'Basic options for your PuTTY session' section is active, showing:
 - Serial line: `COM73`
 - Speed: `115200`
 - Connection type: Serial (Other options: Raw, Telnet, Rlogin, SSH)
 - Close window on exit: Only on clean exit (Other options: Always, Never)
- MfgTool_MultiPanel (Library: 2.6.2):** A window titled 'Hub 5--Port 2' showing 'Status Information' with a table:

Successful	Failed	Failure Rate:
1	0	0.00 %

Below the table, it says 'No Device Connected' and has 'Stop' and 'Exit' buttons.
- Device Manager:** Shows the 'Ports (COM & LPT)' section expanded, listing:
 - ECP Printer Port (LPT1)
 - USB Serial Port (COM73)
- Format disk dialog:** A small dialog box at the bottom asking 'Do you want to format it?' with 'Format disk' and 'Cancel' buttons.

How to Boot from the Internal SPI-NOR Flash

The screenshot displays a Windows desktop environment with several windows open:

- File Explorer:** Shows the directory path `mfgtool_scm.tar > mfgtools`. The interface includes standard Windows navigation and file management options.
- COM73 - PuTTY:** A terminal window showing the boot process of a Freescale i.MX Release Distro. The output includes:

```
)  
ALSA device list:  
 #0: imx-hdmi-soc  
kjournald starting. Commit interval 5 seconds  
EXT3-fs (mtdblock3): using internal journal  
EXT3-fs (mtdblock3): mounted filesystem with ordered data mode  
VFS: Mounted root (ext3 filesystem) on device 31:3.  
devtmpfs: mounted  
Freeing unused kernel memory: 392K (809f8000 - 80a5a000)  
random: nonblocking pool is initialized  
INIT: version 2.88 booting  
Starting udev  
udevd[182]: starting version 182  
bootlogd: cannot allocate pseudo tty: No such file or directory  
Populating dev cache  
Wed Feb 17 20:24:35 UTC 2016  
INIT: Entering runlevel: 5  
Configuring network interfaces... ifconfig: SIOCGIFFLAGS: No such device  
Starting syslogd/klogd: done  
  
Freescale i.MX Release Distro 3.14.52-1.1.0 imx6dqscm-1gb-qwks /dev/ttymx0  
imx6dqscm-1gb-qwks login: root  
root@imx6dqscm-1gb-qwks:~#
```
- MfgTool_MultiPanel (Library: 2.6.2):** A utility window showing "Hub 5--Port 2" with "No Device Connected" and a "Status Information" table:

Status Information	
Successful	1
Failed	0
Failure Rate:	0.00 %

Buttons for "Stop" and "Exit" are visible.
- Device Manager:** Shows a list of hardware devices, including "Intel(R) USB 3.0 eXtensible Host Controller" and "Intel(R) USB 3.0 Root Hub".
- System Message:** A blue notification box at the bottom center states: "You need to format the disk in drive E: before you can use it. Do you want to format it?"

How to Erase the Internal SPI-NOR from uboot

sf probe

sf erase 0 0x10000

```
COM71 - PuTTY
I2C:   ready
DRAM:  1 GiB
PMIC:  PFUZE100 ID=0x10
MMC:   FSL_SDHC: 0, FSL_SDHC: 1, FSL_SDHC: 2
SF: Detected N25Q128 with page size 256 Bytes, erase size 64 KiB, total 16 MiB
*** Warning - bad CRC, using default environment

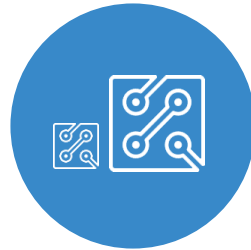
No panel detected: default to Hannstar-XGA
Display: Hannstar-XGA (1024x768)
In:     serial
Out:    serial
Err:    serial
Net:    Phy 3 not found
PHY reset timed out
FEC [PRIME]
Error: FEC address not set.

Normal Boot
Hit any key to stop autoboot:  0
=> sf probe
SF: Detected N25Q128 with page size 256 Bytes, erase size 64 KiB, total 16 MiB
=> sf erase 0 0x10000
SF: 65536 bytes @ 0x0 Erased: OK
=> run bootcmd
```

CONCLUSION



NXP Single Chip System Modules



They are available

SCM-i.MX 6Dual/6Quad is full enabled for design starts. SCM-i.MX 6SoloX and SCM-i.MX 6SoloX V-Link are available for early adoption. Talk to us about how to get on the beta program.



Get started on your design

SCMs are proven to reduce PCB size by up to 68% and shorten time-to-market by more than 25%. You now have the tools and know-how to get started on your own design.



Compelling roadmap

New and exciting products will continue to be released in 2016, with enhanced integration such as other i.MX applications processors, security, connectivity and RF.



THANK YOU



Resources

- SCM Webpage
 - <http://www.nxp.com/scm>
- SCM-i.MX 6D
 - <http://www.nxp.com/products/single-chip-modules/single-chip-module-i.mx-6d:SCM-i.MX6D>
- SCM-i.MX 6Q
 - <http://www.nxp.com/products/single-chip-modules/single-chip-module-i.mx-6q:SCM-i.MX6Q>
- SCM-i.MX 6SX
 - <http://www.nxp.com/products/single-chip-modules/single-chip-module-i.mx-6sx:SCM-i.MX6SX>
- SCM Quick Start Board
 - <http://www.nxp.com/qwks-scm-imx6dq>
- SCM Software Download
 - http://www.nxp.com/products/single-chip-modules/quick-start-board-for-scm-i.mx-6dq:QWKS-SCM-IMX6DQ?fsp=1&tab=Design_Tools_Tab



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FOR A SMARTER WORLD

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