Overview

MX53 201112 Linux BSP patch release is based on L2.6.35_11.09.01_ER. It includes the following source packages:

- u-boot-v2009.08-imx_11.09.01_201112.tar.gz: U-Boot patches
- linux-2.6.35.3-imx_11.09.01_201112.tar.gz: Kernel patches
- imx-lib-11.09.01_201112.tar.gz: imx libraries patches
- imx-test-11.09.01_201112.tar.gz: Unit test patches
- firmware-imx-11.09.01_201112.tar.gz: vpu firmware patches
- amd-gpu-bin-mx51-11.09.01_201112.tar.gz: amd-gpu binary package for FrameBuffer solution.
- amd-gpu-x11-bin-mx51-11.09.01_201112.tar.gz: amd-gpu binary package for X-Window

BSP Change Lists

The changes highlighted in color "yellow" should be taken care.

- **u-boot**

CR Number	Description
ENGR00161415	Set charging current limit to 1p5 for MC34708 in MX53 PCBA board
ENGR00155891	Fix reboot stress test failure on MX53 boards. When using plug-in mode on MX53 MC34708 QuickStart board, the reboot is failed sometimes. It' caused by DDR unstable. This patch is to enable "Force Measurement" after the delay parameters are configured. It can guarantee DDR is stable before running SW on DDR.
ENGR00162437	Add SPI connection support for MC34708 in MX53 PCBA board.
ENGR00162491	Allow to enter recovery mode by pressing key for MX53 SMD Android.
ENGR00162938	Add download_mode command in uboot and allow to use this command to enter MFG download mode.
ENGR00162717	DA9053: reset da9053 i2c and add dummy write operations.
ENGR00163239	MX53 PCBA: MC34708 charging function enablement
ENGR00163704	Add I2C recovery function in MX53 platform. When MX53 is reading some bytes from I2C device and MX53 conducts reset or reboot operations, the I2C SDA line will be pulled down by some I2C devices and the I2C bus shows busy. This patch is to add a recovery mechanism to recovery I2C bus.
ENGR00169500	Add new feature in MX53 MC34708 QuickStart board: If pressing power key 4s, power down the system.

- **Kernel**

CR Number	Description
ENGR00157473	Disable UART2 DMA mode by default on MX5x.
ENGR00158480	Fix random garbage lines when showing NV12 frames decode by VPU with V4L2 output on XGA@60 display's overlay framebuffer. V4L2 output uses MEM_PP_MEM to do 180 degree rotation.
ENGR00155891	Add WDI reset function for reboot on MX53 MC34708 QuickStart board
ENGR00159010	IPUv3:Restore IDMAC_CH_LOCK_EN_1 for resume
ENGR00159738	V4L2: correct wrong parameter when the V4L2 sets window size
ENGR00160566	Clear IDMAC_LOCK_EN when dual display is enabled to workaround black flash issue when playing video on DP-FG
ENGR00161215	VPU: Add ioctls for querying and setting bitwork memory
ENGR00162195	IPUv3M:Clear IDMAC_LOCK_EN_1 for tough single display
ENGR00162464	AMD GPU: upgrade microcode to fix GPU hang issue
ENGR00162711	Dialog Company suggests to add dummy write for DA9053 I2C register access. It can decrease the possibility of I2C failure which may cause DA9053 hang. Such kind of hang can not be covered if not power off totally.
ENGR00162708	MX5: Add I2C dummy write when acessing DA9053 registers and mask nONKEY event for i2c operation before suspend
ENGR00163698	MX53 ARD: fix typo error for pwm1 pad disable function
ENGR00162578	MX5: increase DMA Zone size to 112M
ENGR00169603	MX53 ARD: FlexCAN: Set lp_apm as clock source
ENGR00170342	PWM: fix pwm output can't be set to 100% full duty
ENGR00170244	SATA: Enable PDDQ mode to save power when the SATA is not used.

- **imx-lib**

CR Number	Description
ENGR00156800	VPU: Fix decoding mp4PackedPBFrame stream failure issue
ENGR00162690	VPU: Fix the issue of rotation 180 degree in encoder

- **imx-test**

CR Number	Description
ENGR00158471	This patch is to fix "ipu unit test application missing" issue. It reverts "ENGR00155135 ipudev test: test for processing driver" because ENGR00155135 should not be applied for 2.6.35 BSP release.
ENGR00170223	VPU: Fix encoder with rotation 90 or 270 incorrect issue
ENGR00162747	fix asrc sample rate convert issue

- **firmware**

CR Number	Description
ENGR00159846	Upgrade VPU f/w to v1.4.44 on i.MX5 Fixed issue: 3204: [Decode/H.264] VPU output has mosaics for one clip
ENGR00170287	Upgrade VPU f/w to v1.4.49 on mx51

	Upgrade VPU f/w to v1.4.48 on mx53

- **amd-gpu library**

CR Number	Description
ENGR00156789	Optimizes the resolve stage of the OpenGLES rendering to only include bins that have been touched (as determined by the scissor rectangles used since the last resolve for the same surface). This brings two performance improvements: - When using preserved swap mode only bins that have been updated will be resolved reducing the overall resolve time for the frame - When not using preserved swap mode the area outside any scissor rectangle is untouched. This gives the application the possibility to optimize if they have a bit of knowledge off the number of render surfaces being used. Although this is not mandated in the specification, many graphics engines take advantage of this behavior if it exists to further optimize updates to small areas of the display
ENGR00162132	Fill Physical address for non-YUV images in eglQueryImageFSL
ENGR00162464	Add neon optimization

How to apply the patches

- Install 11.09.01 release from L2.6.35_11.09.01_ER_source
- Unzip the patch package to ~/ folder.
- cd ltib

Kernel:

- ./ltib -m prep -p kernel
- cd rpm/BUILD/linux-2.6.35.3
- tar -xvzf ~/linux-2.6.35.3-imx_11.09.01_201112.tar.gz
- sh linux-2.6.35.3-imx_11.09.01_201112/patch.sh

U-Boot:

- ./ltib -m prep -p u-boot
- cd rpm/BUILD/u-boot-2009.08/
- tar -xvzf ~/u-boot-v2009.08-imx_11.09.01_201112.tar.gz
- sh u-boot-v2009.08-imx_11.09.01_201112/patch.sh
- ./ltib -m prep -p imx-lib

imx-lib:

- ./ltib -m prep -p imx-lib
- cd rpm/BUILD/imx-lib-11.09.01/
- tar -xvzf ~/imx-lib-11.09.01_201112.tar.gz
- sh imx-lib-11.09.01_201112/patch.sh

imx-test:

- ./ltib -m prep -p imx-test
- cd rpm/BUILD/imx-test-11.09.01/

- tar -xvzf ~/imx-test-11.09.01_201112.tar.gz
- sh imx-test-11.09.01_201112/patch.sh

firmware:

- ./ltib -m prep -p firmware
- cd rpm/BUILD/firmware-imx-11.09.01/
- tar -xvzf ~/firmware-imx-11.09.01_201112.tar.gz
- sh firmware-imx-11.09.01_201112/patch.sh

amd-gpu for FB solution:

- Please use amd-gpu-bin-mx51-11.09.01_201112.tar.gz to replace amd-gpu-bin-mx51-11.09.01 binary package.
- tar -xvzf ~/amd-gpu-bin-mx51-11.09.01_201112.tar.gz
- ./ltib -m prep -p amd-gpu-bin
- cd rpm/BUILD/amd-gpu-bin-mx51-11.09.01
- rm -r -f *
- cp -r -f ~/amd-gpu-bin-mx51-11.09.01_201112/* .

amd-gpu for X-Window:

- Please use amd-gpu-x11-bin-mx51-11.09.01_201112.tar.gz to replace amd-gpu-x11-bin-mx51-11.09.01 binary package.
- tar -xvzf ~/amd-gpu-x11-bin-mx51-11.09.01_201112.tar.gz
- ./ltib -m prep -p amd-gpu-x11-bin
- cd rpm/BUILD/amd-gpu-x11-bin-mx51-11.09.01
- rm -r -f *
- cp -r -f ~/amd-gpu-x11-bin-mx51-11.09.01_201112/* .

Known issue or limitation

CR Number	Description	Resolution/Workarounds
ENGR00170301	[MX53_QS_RIPLEY] HDMI: No display on HDMI after reboot if connected with HanStar LVDS. 100%	It's caused by the I2C address conflict (0x50) between LVDS and HDMI DDC channel. When MCIMX-LVDS1 is connected, HDMI cannot be able to read EDID correctly. The workarounds are: Option 1: Cut I2C connection to LVDS because LVDS EDID feature wasn't used by current BSP. Option 2: Switch LVDS I2C connection to different I2C bus Option 3: change a LVDS display module with different EDID address.
ENGR00158284	[MX53_QS_RIPLEY] To plug in and plug out WIFI daughter card cause microSD card kernel dump info on SD	When the issue happens, the voltage drop on SD card VDD pin was observed on the failed board. In some

	rootfs. 100%	cases, it may be necessary to start the board with the WiFi card inserted and leave it in the slot to prevent in rush current problems. The root cause is still under investigation.
ENGR00170456	[MX53_QS_RIPLEY] USB otg: System would hang if plug out usb cable after modprobe g_ether or modprobe g_serial. 100%	This issue happens in the default BSP is due to the following reasons: - Hardware Design: There are two ports at OTG port in i.MX53 QS board: One is the device port; the other one is host port. The ID pin is grounded. So it can not support device/host switch. The device function is invalid by default. And the host and device functions at OTG port can not be supported at the same time. - However, the single deconfig is used for all i.MX5 platforms. The other platforms expect to enable OTG function by default. This enablement on i.MX53QS board can not align with the default HW capability and cause the issue mentioned. The below is the kernel configuration requirement for i.MX53 QS board: - Disable OTG configurations: ONFIG_MXC_OTG, CONFIG_USB_OTG - Choose one of the below configurations for host or device mode. But DO NOT choose them together. Host configuration: CONFIG_USB_EHCI_ARC_OTG Device Configuration: CONFIG_USB_GADGET