Arm SystemReady IR v2.0: Errata Document

Company: NXP
System: NXP i.MX8M Mini EVK
SoC Family: i.MX8M Mini
Firmware Version: NXP 2023 Q1 firmware, version LF 6.1.1_1.0.0 (U-Boot 2022.04)
ACS Version: ACS-IR v23.03_2.0.0
SRS details: SRS v2.1
BSA details: BSA v1.0c
BBR details: EBBR v2.1.0 (BBR v2.0)
BBSR details: BBSR v1.2
Arm SystemReady certification: SystemReady IR v2.0 (level 1) with Security Interface Extension v1.2

Certification Notes

Note #1 - Firmware setup

Clear the RPMB from U-Boot prompt with:

```
u-boot=> mw 0x60000000 0xc33eebd3;mw 0x60000004 0x9f4c336e
u-boot=> mw 0x60000008 0xc0e28c98;mw 0x6000000c 0x615459b8
u-boot=> mw 0x60000010 0x86cf2b0d;mw 0x60000014 0xf24d8464
u-boot=> mw 0x60000018 0xc6e656ab;mw 0x6000001c 0xe401b71b
u-boot=> mw.b 0x50000000 0 0x400000
u-boot=> mmc rpmb write 0x50000000 0 0x2000 0x60000000
```

Setup the U-Boot environment:

```
u-boot=> env default -a
u-boot=> env set dfu_alt_info "mmc 2=1 raw 0x42 0x2000
                               mmcpart 1"
u-boot=> saveenv
```

Format the eMMC and create:

- A protective partition of at least 4MB at the start of eMMC user data with attribute bit 0 (required partition) set, to protect U-Boot environment
- An ESP

Example layout:

```
Num     Start       End Size        Code Name
     (sector)  (sector)
  1      2048     34815 16.0 MiB    B000 U-Boot boot loader
  2     34816   2131967 1024.0 MiB  EF00 EFI system partition
```

Note #2 - Fedora Server 37 1.7 installation

Install from iso on SD card to eMMC.

It is easier to install Fedora when there is only the protective partition and no ESP. To modify the partitions manually:

- Switch from the installer to a shell with `CTRL-b 2`.
- Partition the eMMC with `gdisk /dev/mmcblk2`. Keep the protective partition.

https://download.fedoraproject.org/pub/fedora/linux/releases/37/Server/aarch64/iso/Fedora-Server-dvd-aarch64-37-1.7.iso

Note #3 - Debian 11.6.0 installation

Install from SD card to eMMC. Select `/dev/mmcblk1` as source medium. When partitioning the eMMC with the installer, keep the protective partition. GRUB must be installed manually; see the errata.
https://cdimage.debian.org/debian-cd/current/arm64/iso-dvd/debian-11.6.0-arm64-DVD-1.iso

Note #4 - OpenSUSE Leap 15.4 Build31.185 installation

Install from iso on SD card to eMMC. Keep the protective partition.
https://download.opensuse.org/distribution/leap/15.4/iso/openSUSE-Leap-15.4-DVD-aarch64-Media.iso

Note #5 - Ubuntu Server 22.04.2 installation

Install from iso on SD card to eMMC.

It is easier to create the partitions manually and select them from the installer. To modify the partitions manually:

- Select the "Help" menu and then the "Enter shell" menu to start a shell.
- Partition the eMMC with `fdisk`. Keep the protective partition.

Example layout:

```
Device       Start      End  Sectors  Size Type
mmcblk2p1     2048    34815    32768   16M unknown
mmcblk2p2    34816  2131967  2097152    1G EFI System
mmcblk2p3 2131968 61071326 58939359 28.1G Linux filesystem
```

https://cdimage.ubuntu.com/releases/22.04/release/ubuntu-22.04.2-live-server-arm64.iso

Note #6 - Fedora Workstation Live 37 1.7 installation

Run from iso on SD card.
https://download.fedoraproject.org/pub/fedora/linux/releases/37/Workstation/aarch64/iso/Fedora-Workstation-Live-aarch64-37-1.7.iso

Note #7 - openSUSE Tumbleweed Rescue CD Snapshot20230403 installation

Run from iso on SD card.
https://download.opensuse.org/ports/aarch64/tumbleweed/iso/openSUSE-Tumbleweed-Rescue-CD-aarch64-Current.iso

List of Errata

Errata #1 - Debian GRUB installation must be finalized manually

During Debian installation, the "Install the GRUB boot loader" step will fail and manual intervention is necessary to make the installed system bootable.

Select "Execute a shell" and do:

```
# in-target grub-install --no-nvram --force-extra-removable
# in-target update-grub
```

Exit the chroot and the shell to return to the installer and select the "Continue without boot loader" step to finish installation.

See https://lists.debian.org/debian-boot/2021/11/msg00100.html.