UG10094

User Guide for i.MX 8ULP Smartwatch Demo

Rev. 1 — 13 December 2023

Document information

Information	Content
Keywords	UG10094, i.MX 8ULP, Smartwatch
Abstract	This document is the user guide for i.MX 8ULP Smartwatch Demo.

1 Preparation

To get prepared, perform the following steps:

- On the [Android OS for i.MX Applications Processors](#) page:
  - Click **Install Source Package for Android 13.0.0_2.0.0 (L6.1.22_2.0.0 BSP)** to get *imx-android-13.0.0_2.0.0.tar.gz*.
  - Click **Documentation for Android 13.0.0_2.0.0 (L6.1.22_2.0.0 BSP)** to get the *Android User's Guide* (document [AUG](#)).
- *smart_watch_android_imx8ulp_patch.tar.gz*

2 Download and Patch

To download and patch, perform the following steps:

1. Uncompress *imx-android-13.0.0_2.0.0.tar.gz*.
2. Put *smart_watch_android_imx8ulp_patch/* into *imx-android-13.0.0_2.0.0/*.
3. Install the repo.

```
mkdir ~/bin
curl https://storage.googleapis.com/git-repo-downloads/repo > ~/bin/repo
chmod a+x ~/bin/repo
export PATH=~/bin:${PATH}
```

The latest repo only supports python3 instead of python2. If the customer uses python2 by default, add the following command.

```
ln -s /usr/bin/python3 ~/bin/python
```

4. To download the code, use the following command:

```
source ./imx-android-13.0.0_2.0.0/imx_android_setup.sh
```

5. Now, the shell is at *imx-android-13.0.0_2.0.0/android_build/*.
6. To apply the patches, use the following command:

```
export MY_ANDROID=`pwd`
../smart_watch_android_imx8ulp_patch/patch_all.sh
```

3 Build

To build, perform the following steps:

1. Install the tool chain, clang, and kernel-build-tools. For details, see the **Chapter 3.2 Build Android Image** in the *Android User's Guide* (document [AUG](#)).
2. Configure and Build

```
cd ${MY_ANDROID}
source build/envsetup.sh
lunch watch_8ulp-userdebug
./imx-make.sh -j4 2>&1 | tee build-log.txt
```

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4   Flash

To flash, perform the following steps:

1. Copy the following images in *android_build/out/target/product/watch_8ulp/* to the personal computer.
   a. boot.img
   b. dtbo-imx8ulp.img
   c. init_boot.img
   d. partition-table.img
   e. super.img
   f. u-boot-imx8ulp.imx
   g. u-boot-imx8ulp-evk-uuu.imx
   h. uuu_imx_android_flash.bat (for Windows) or uuu_imx_android_flash.sh (for Linux)
   i. vbmeta-imx8ulp.img
   j. vendor_boot.img
2. Download the UUU tool to the same folder as images in Step 1.
3. Switch **S1** to `b'10`. Connect POWER, TYPE-C, and UART.

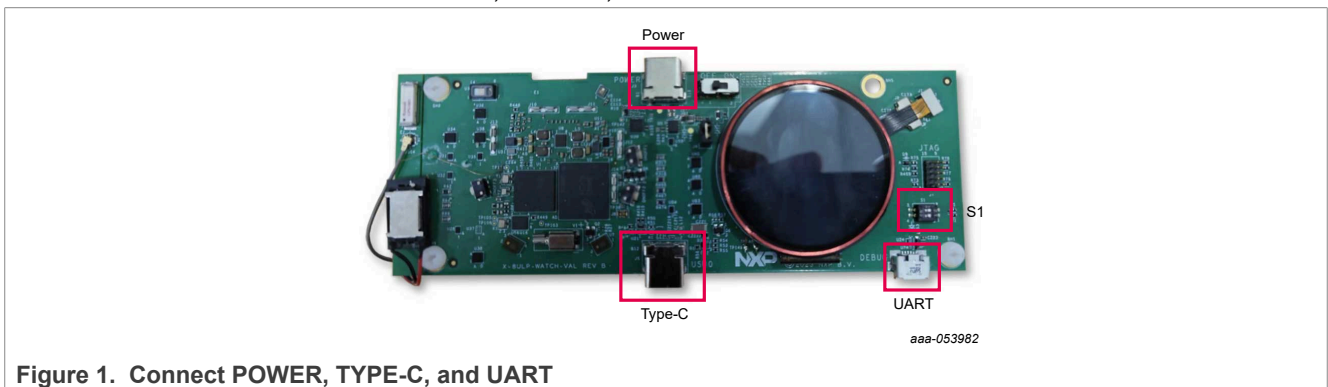**Figure 1. Connect POWER, TYPE-C, and UART**

4. In the CMD console of the personal computer:

```
.\uuu_imx_android_flash.bat -f imx8ulp -a -e
```

```
PS F:\work\Android\13_0_0_2_0_0\8ulp\watch_8ulp> .\uuu_imx_android_flash.bat -f imx8ulp -a -e
This script is validated with uuu 1.4.182 version, it is recommended to align with this version.
dtbo is supported
dual slot is supported
dynamic partition is supported
vendor_boot is supported
init_boot is supported
generate lines to flash u-boot-imx8ulp.imx to the partition of bootloader0
generate lines to flash partition-table.img to the partition of gpt
generate lines to flash dtbo-imx8ulp.img to the partition of dtbo_a
generate lines to flash vendor_boot.img to the partition of vendor_boot_a
generate lines to flash init_boot.img to the partition of init_boot_a
generate lines to flash boot.img to the partition of boot_a
generate lines to flash vbmeta-imx8ulp.img to the partition of vbmeta_a
generate lines to flash super.img to the partition of super
uuu script generated, start to invoke uuu with the generated uuu script
uuu (Universal Update Utility) for nxp imx chips -- libuuu_1.4.243-0-ged48c51

Success 1    Failure 0


1:1321  21/21 [Done                             ] FB: done
```

Note: Use the command if your operation system is Linux: >.\uuu_imx_android_flash.sh -f imx8ulp -a -e.

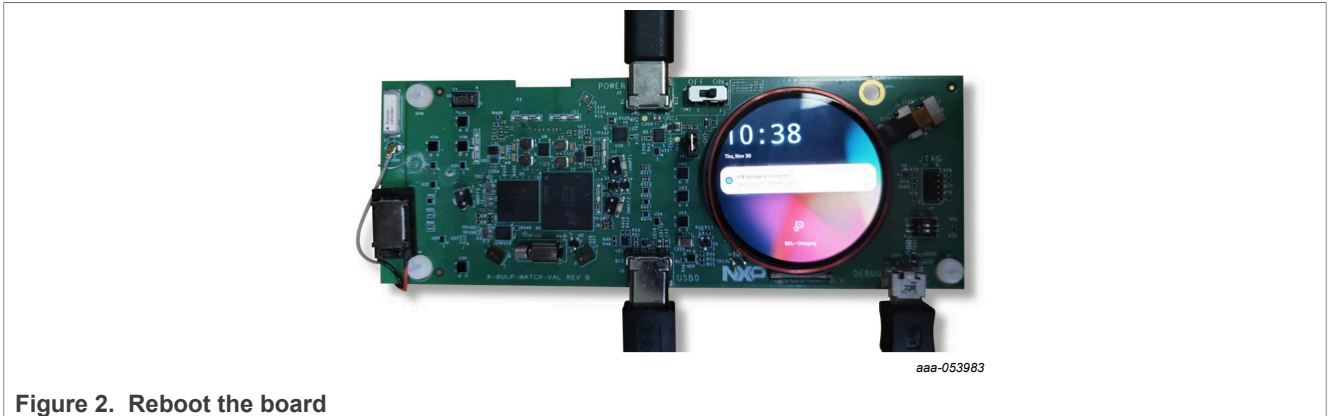5. Switch **S1** to `b'01` after the flashing is done. Then reboot the board.

Figure 2. Reboot the board

5 Note about the source code in the document

Example code shown in this document has the following copyright and BSD-3-Clause license:

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6 Revision history

Table 1 summarizes the revisions to this document.

Table 1. Revision history

Document ID	Release date	Description
UG10094 v.1	13 December 2023	Initial public release

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