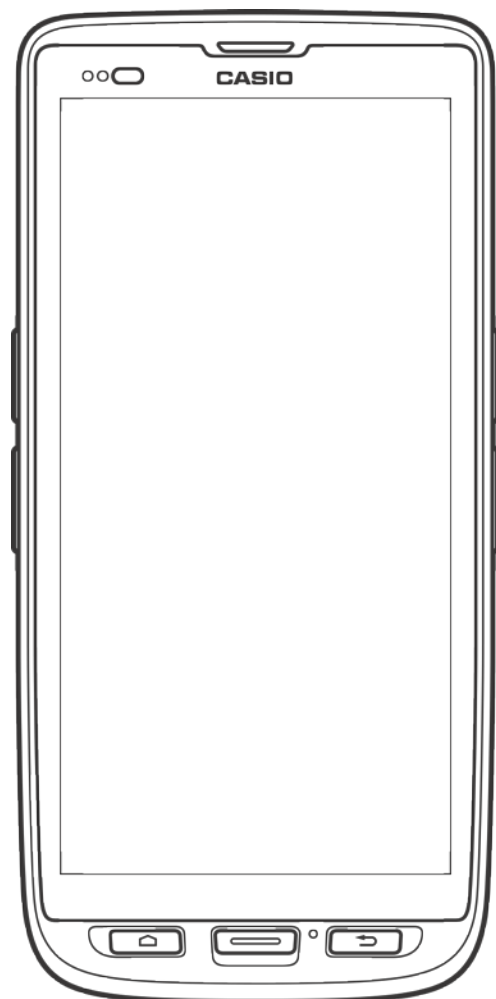


CASIO®

ET-L10 Series

Android 9 Quick Start Guide

This document is a Development Guide Book
for ET-L10 application developers.



Ver. 1.00

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1. Overview

ET-L10 is the device that is suitable for light work which is located between the conventional rugged handy terminal and a smart phone. This document is a development guidebook written for the ET-L10 application developers.

ET-L10 was developed as the device for customers who want to use smartphones for work but are not satisfied with smartphones.

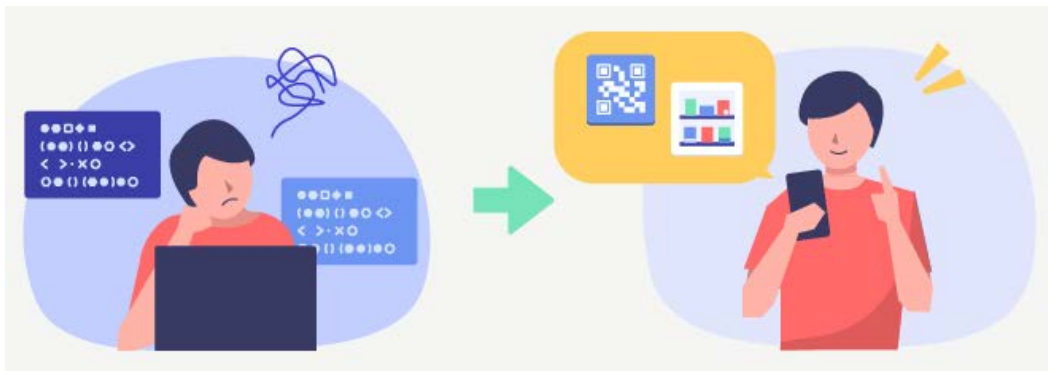
Conventional rugged handy terminal required specialized knowledge to control barcode scanner, but ET-L10 does not need it.

From the getting date, it is set to be able to read all barcodes with standard Android application.

Customers who want to make advanced settings for the barcode scanner can use the setting tool instead of modifying their application.

Of course, they can control the barcode scanner also from the application by issuing scanner intents.

Refer to the "Barcode scanner control manual" for details on the setting tool and the intent for controlling the barcode scanner from the application.



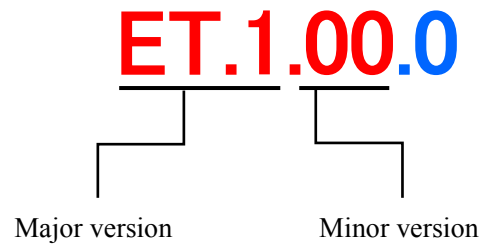
1.1 Structure

The following figure shows the structure of this kit.

Folder / File	Description
/MANUAL	This folder contains manuals.
QuickStartGuide.pdf	A guidebook for developers to read first. Describes the application development requirements and development environment.
SoftwareManual.pdf	This is a manual for the installed software. Describes the basic specifications of the software.
HardwareManual.pdf	This is a manual for the hardware. Describes a note on handling and operation of the device.
BarcodeScannerControlManual.pdf	This is a manual for the barcode scanner. Describes how to control from the setting tool and how to create a control application.
KittingManual.pdf	This is a manual for the "Kitting". Describes the kitting procedure for making the device ready for business use.
/SOFTWARE	This folder contains softwares
/Scanner	This folder contains about scanner
/Sample/SymbolScan.zip	Sample code for controlling the barcode scanner.
/OSUpdateService	This folder contains about OSUpdateService
/bin/OSUpdateServiceXXXXXXXXXX.apk (X means the version)	APK file of OSUpdateService
/Sample/OSUpdateSample.zip	Sample code for using the OSUpdateService

1.2 Version

The version number of this development kit consists of a combination of major version and minor version, as shown below.



The major number represents the version of Device (i.e. ET-L10). If updates manuals etc., its minor version number is increased.

1.3 Notes

Notes for using this development kit are as follows.

There is a dependency between the version of Android Studio and the version of the Basic Development Kit. For details, refer to "3.1 Recommended environment (p.6)".

Please contact the distributor to get the latest version of development Kit.

2. Development requirement

2.1 Required system

[Windows]

- Microsoft® Windows® 7/8/10 (32- or 64-bit)
- 3 GB RAM minimum, 8 GB RAM recommended. plus 1 GB for the Android Emulator
- 2 GB of available disk space minimum
- 4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
- 1280 x 800 minimum screen resolution
- For accelerated emulator: Intel® processor with support for Intel® VT-x, Intel® EM64T (Intel® 64), and Execute Disable (XD) Bit functionality

[Mac]

- Mac® OS X® 10.10 (Yosemite) or higher, up to 10.13 (macOS Sierra)
- 3 GB RAM minimum, 8 GB RAM recommended; plus 1 GB for the Android Emulator
- 2 GB of available disk space minimum
- 4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
- 1280 x 800 minimum screen resolution

[Linux]

- GNOME or KDE desktop
- Tested on Ubuntu® 18.04 LTS, Trusty Tahr (64-bit distribution capable of running 32-bit applications)
- 64-bit distribution capable of running 32-bit applications
- GNU C Library (glibc) 2.19 or later
- 3 GB RAM minimum, 8 GB RAM recommended; plus 1 GB for the Android Emulator
- 2 GB of available disk space minimum
- 4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
- 1280 x 800 minimum screen resolution
- For accelerated emulator: Intel® processor with support for Intel® VT-x, Intel® EM64T (Intel® 64), and Execute Disable (XD) Bit functionality, or AMD processor with support for AMD Virtualization™ (AMD-V™)

Note!

The explanation after the next chapter is all for Windows (64bit). If using Mac or Linux as a development environment, responsible for building the environment at own risk.

3. Development environment

3.1 Recommended environment

To develop the application for ET-L10, it needs the development environment of Android.

Development language	Development platform (Recommended)
Java	Android Studio 3.0 or above Android SDK (API level 28 -) Google USB driver JDK7 or above (Bundled with Android Studio)

Note!

The basic development kit was confirmed to work with the following Android Studio combination. Use the following combination or above version.

However, there is a possibility that something wrong with work if use the latest unconfirmed Android Studio version. If there is something wrong with work, try with the confirmed below combination.

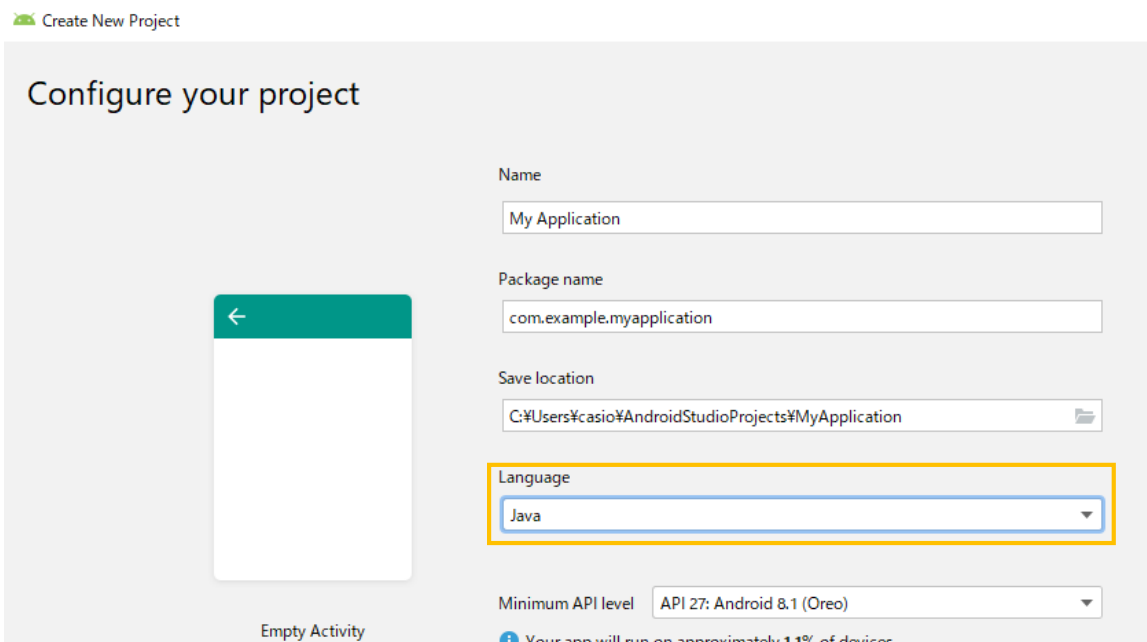
All released versions of Android Studio are available at the following web site.

<https://developer.android.com/studio/archive>

Software	Version
Android Studio	3.5.2
Gradle version (Android Studio)	5.4.1
Android Plugin Version (Android Studio)	3.5.2
Development Kit	ET.1.00.0

The default development language for Android Studio 3.4 or above is Kotlin.

Select Java in case of creating a new project.



3.2 Construction steps

The followings are the basic steps to construct the development environment.

Due to version upgrade of Android Studio, environment may not be constructed by the following procedure. In that case, refer to the procedure described on Google's website etc. and construct the environment.

(1) Android Studio

Download and Install the Android Studio to the PC.

About the version of the Android Studio, refer to the "3.1 Recommended environment (p.6)".

Refer to the "3.2.1 Android Studio (p.8)" for the construction method.

(2) Android SDK and USB driver

Download the Android SDK and USB driver from Google via Android Studio.

The Android SDK will be installed automatically after downloading.

The USB driver is installed when the device is connected to the PC for the first time.

About the version of the Android SDK, refer to the "3.1 Recommended environment (p.6)".

Refer to the "3.2.2 Android SDK and USB driver (p.12)" for the construction method.

(3) Application development

Develop an application with the installed Android Studio.

To debug an application, connect the PC and the ET-L10 via the ADB (Android Debug Bridge) interface.

Refer to the "3.2.3 Application development (p.15)" for development.

3.2.1 Android Studio

Android Studio can be downloaded from the following site of Google.

<https://developer.android.com/studio/>

Agree to the dialog shown below and start downloading.

Executing the downloaded file, follow the instructions to proceed the installation.

Download Android Studio

Before downloading, you must agree to the following terms and conditions.

agree that Google is not responsible for those applications, data, content, or resources. You understand that all data, content or resources which you may access through such third party applications are the sole responsibility of the person from which they originated and that Google is not liable for any loss or damage that you may experience as a result of the use or access of any of those third party applications, data, content, or resources.

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8. Using Android APIs

8.1 Google Data APIs

8.1.1 If you use any API to retrieve data from Google, you acknowledge that the data may be protected by intellectual property rights which are owned by Google or those parties that provide the data (or by other persons or companies on their behalf). Your use of any such API may be subject to additional Terms of Service. You may not modify, rent, lease, loan, sell, distribute or create derivative works based on this data (either in whole or in part) unless allowed by the relevant Terms of Service.

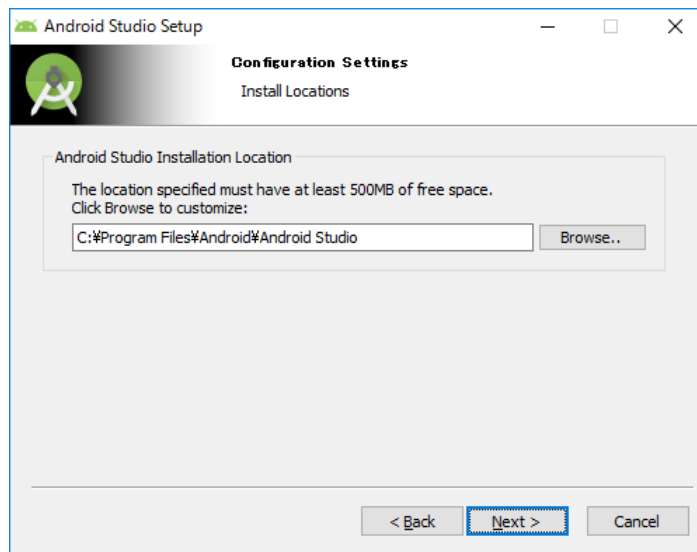
8.1.2 If you use any API to retrieve a user's data from Google, you acknowledge and agree that you shall retrieve data only with the user's explicit consent and only when, and for the limited purposes for which, the user has given you permission to do so. If you use the Android Recognition Service API, documented at the following URL: <https://developer.android.com/reference/android/speech/RecognitionService>, as

I have read and agree with the above terms and conditions

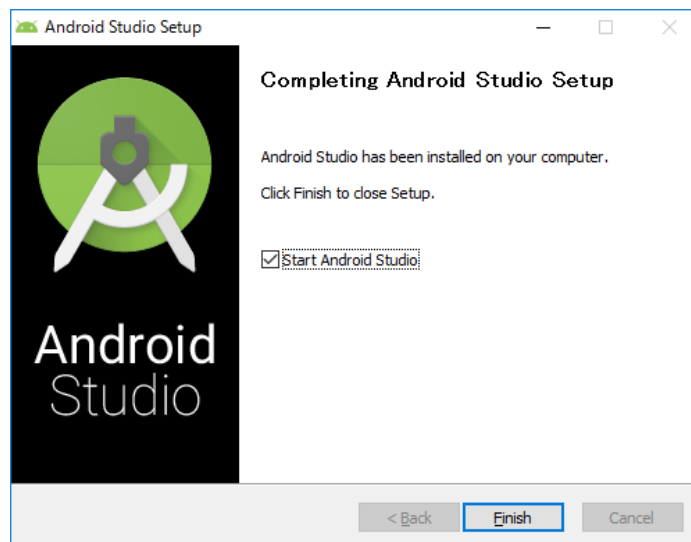
DOWNLOAD ANDROID STUDIO FOR WINDOWS

android-studio-ide-183.5452501-windows.exe

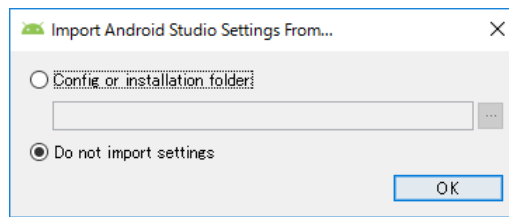
Prompted to specify the installation destination. Change it if necessary.



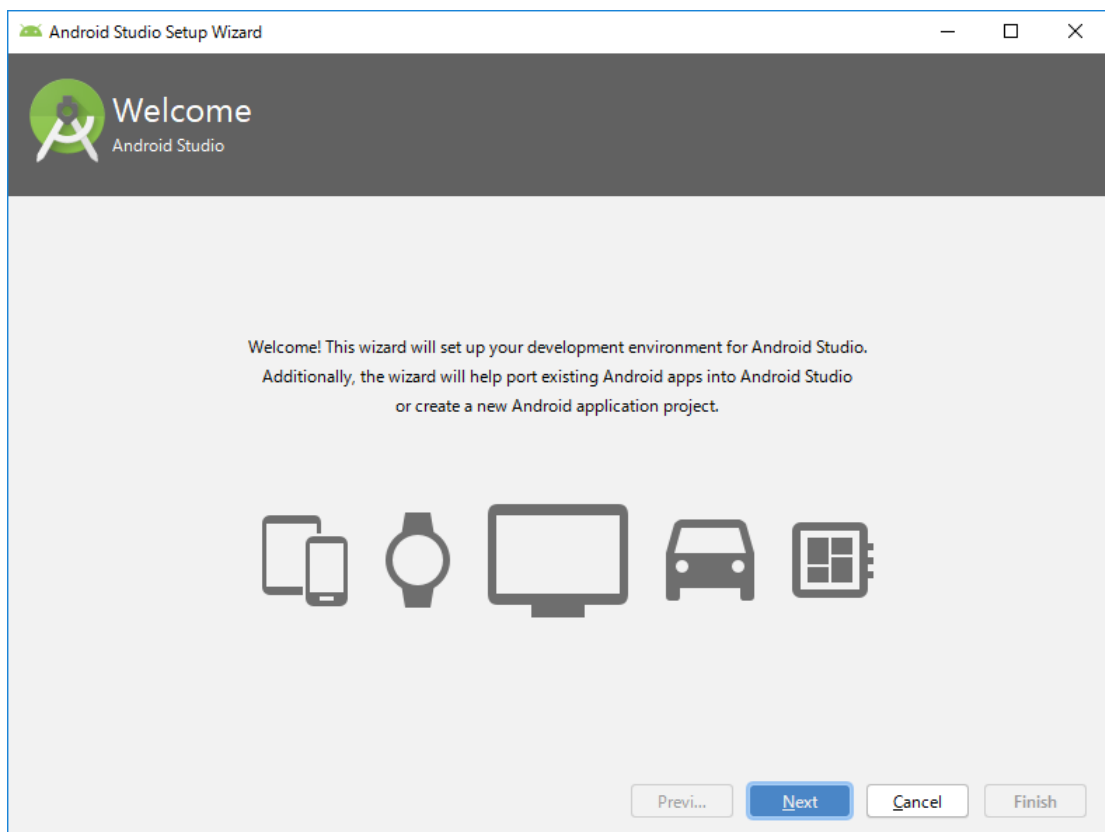
When the below dialog is displayed, installation of Android Studio is completed.



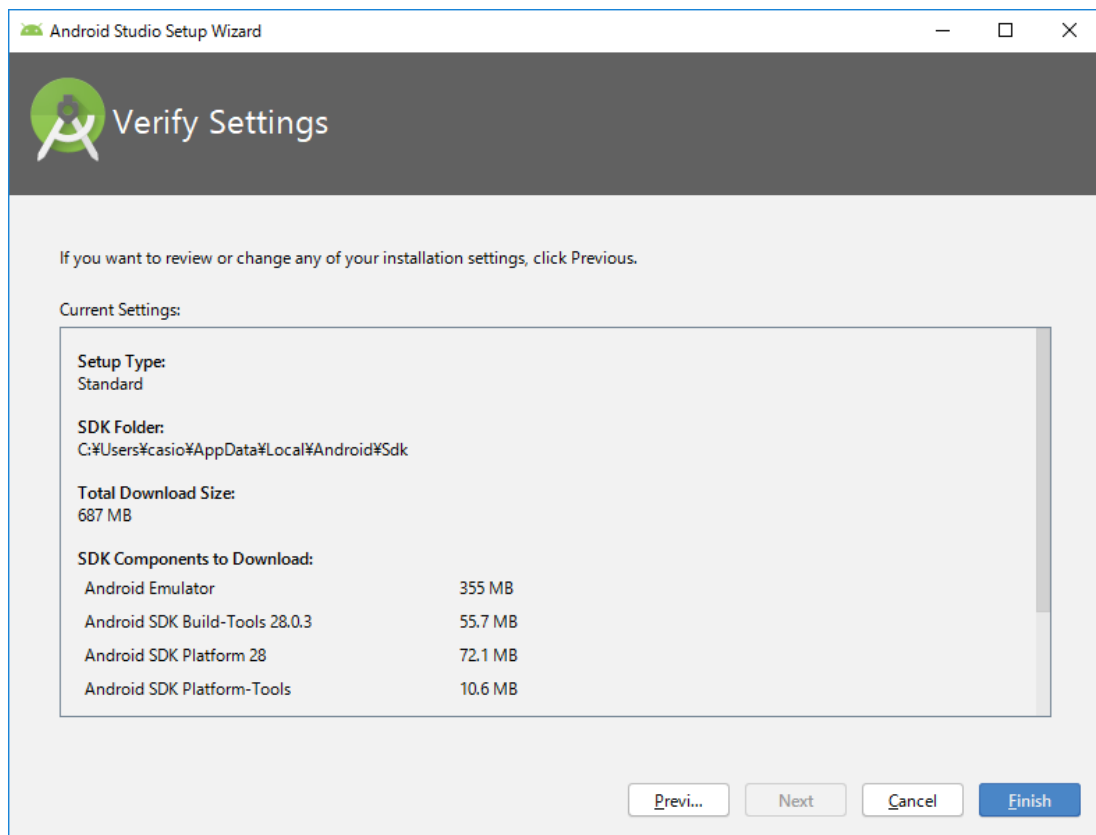
When start the installed Android Studio first time, select whether to use the previous setting or not. If do not want to use the previous setting, select "Do not import settings".



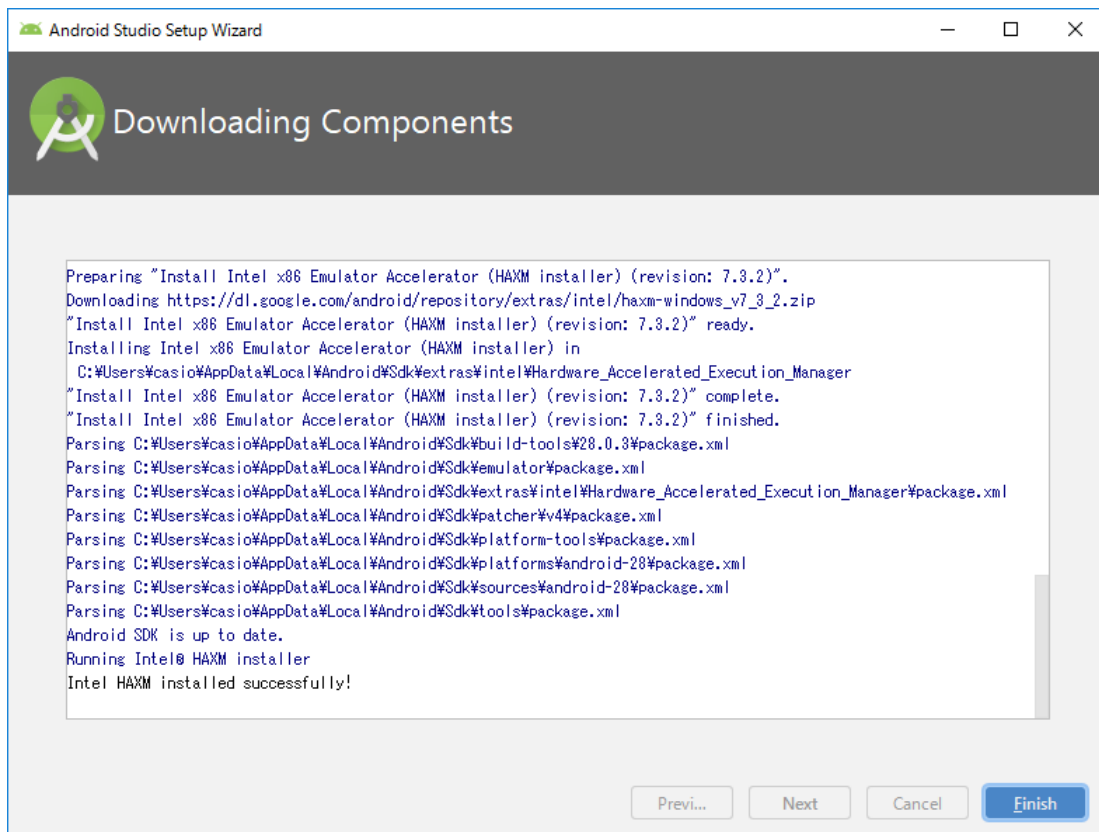
The Setup Wizard will start, so follow the instructions.



If do not have any problem after confirming "Finish".

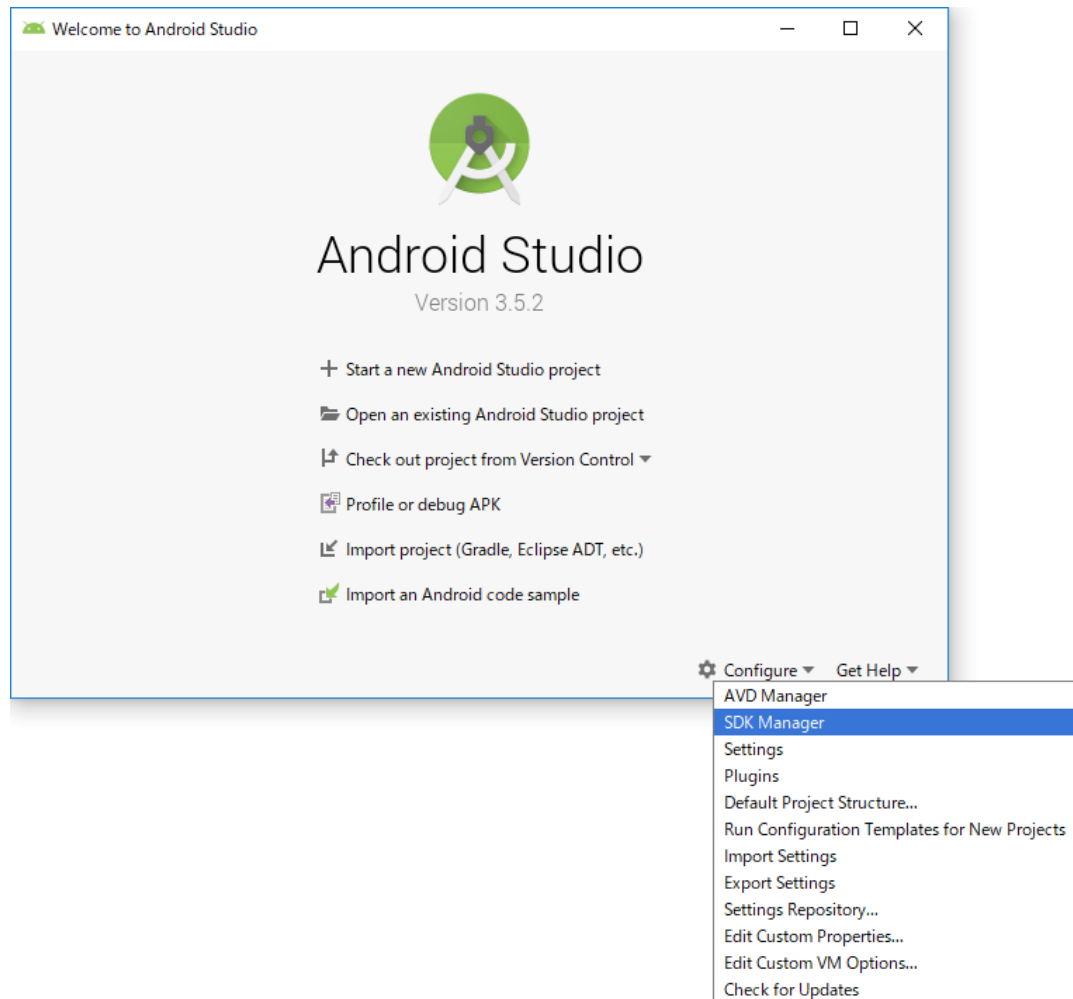


Downloading Components begins. When completed, Android Studio will start up.

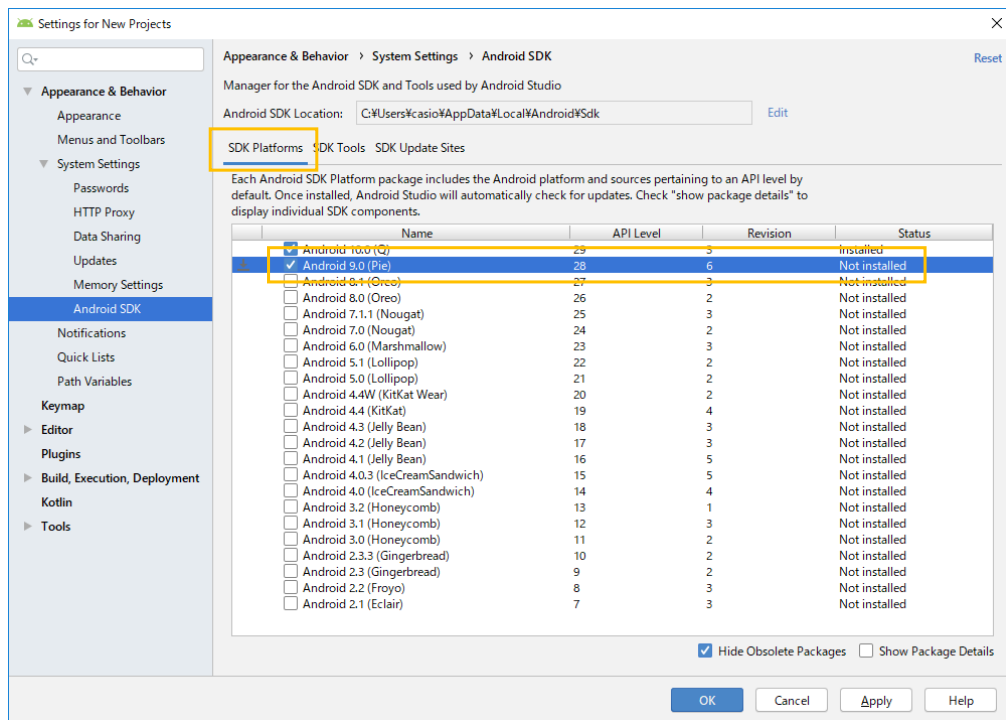


3.2.2 Android SDK and USB driver

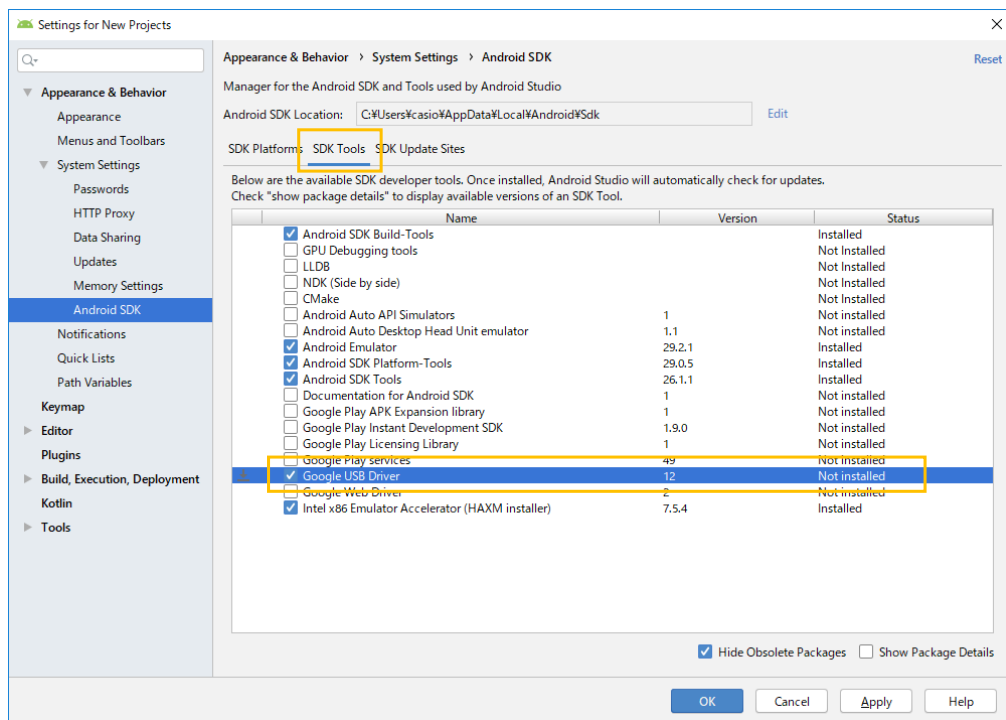
Launch the Android Studio, and chose "SDK Manager" from Configure tab.



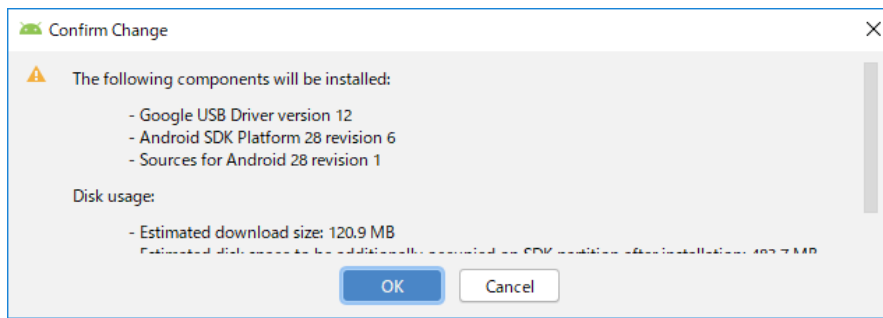
Select "SDK Platform" tab, then check "Android 9.0 (API Level 28)".



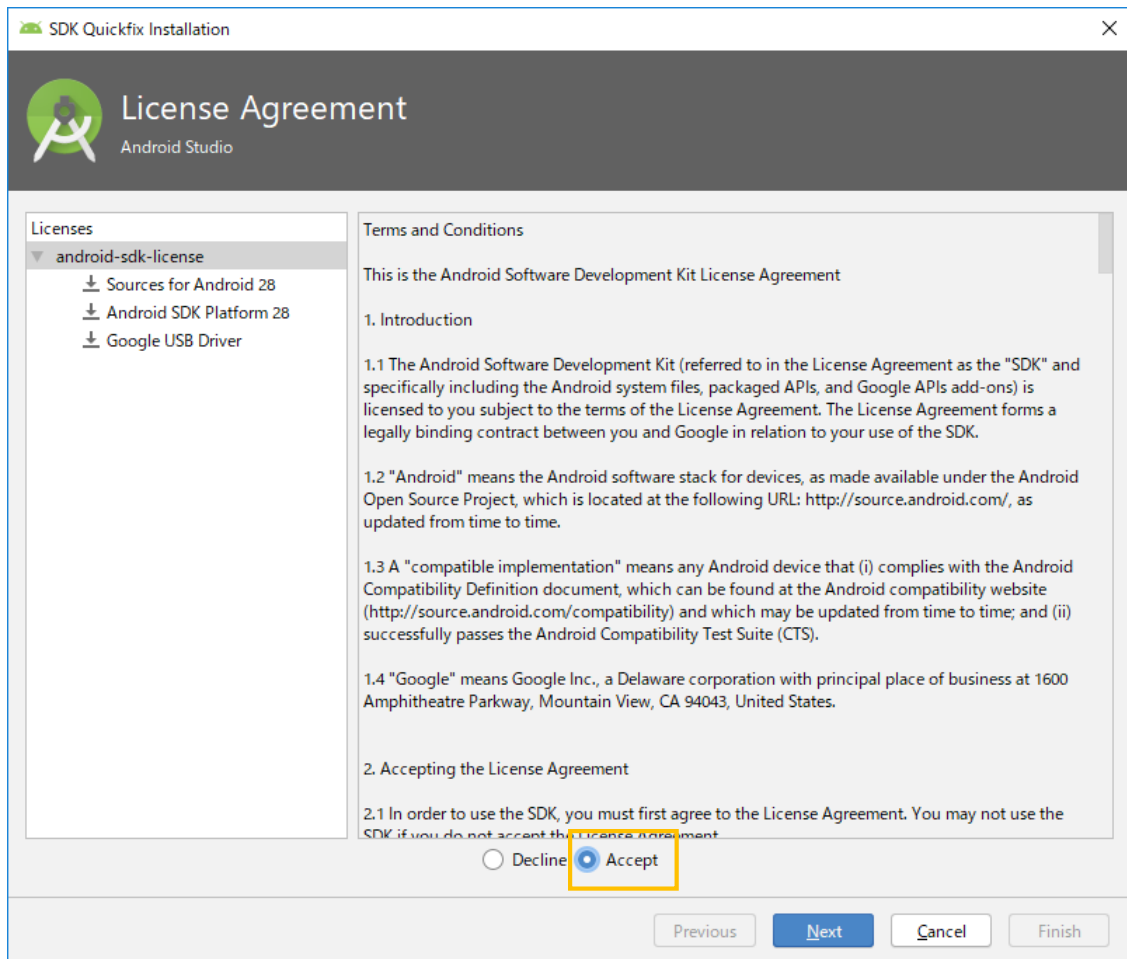
Next, select "SDK Tools" tab and check "Google USB Driver" and press [OK].



The following dialog will be displayed, press "OK".



Agree to the "License Agreement", then press "OK" to start installation.



The USB driver is stored in "extras\google\usb_driver" under "Android SDK Installation Location".

e.g.) C:\Users\xxx\AppData\Local\Android\Sdk\extras\google\usb_driver
(xxx: username of computer)

3.2.3 Application development

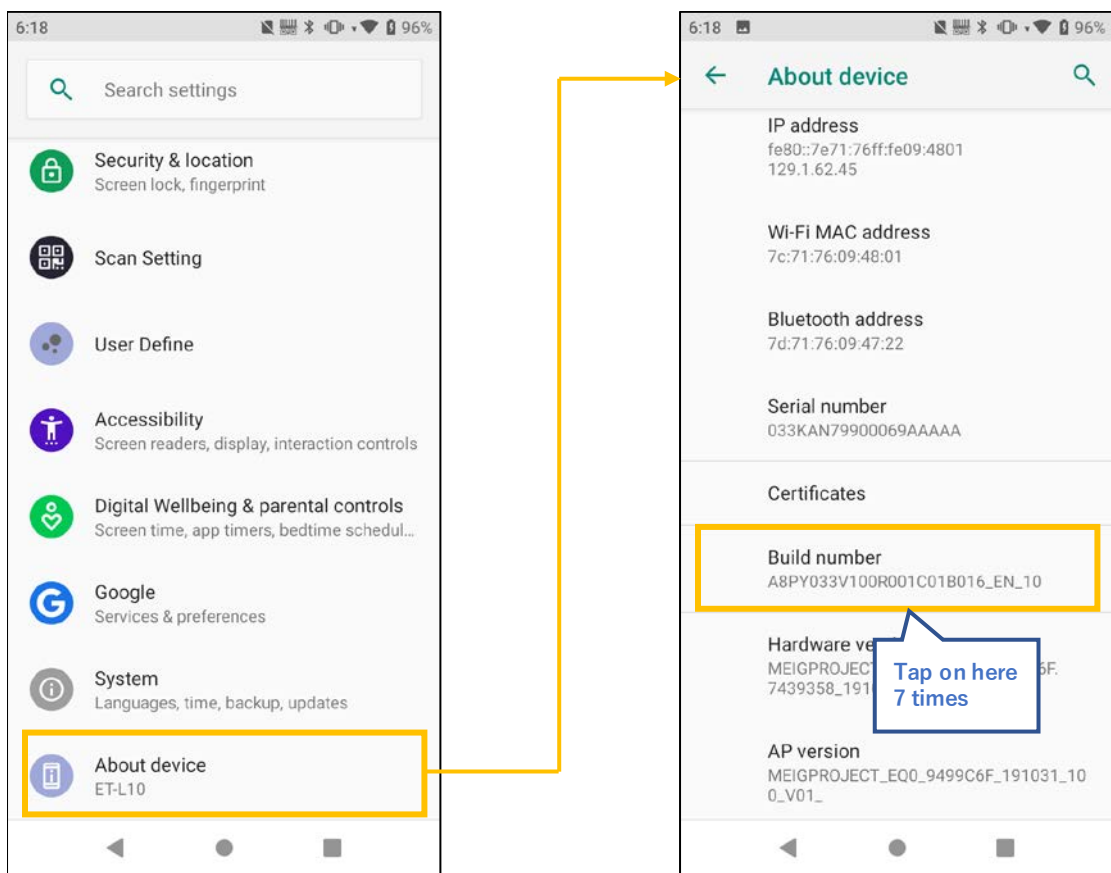
To develop / debug the applications with ET-L10, the following preparation is necessary.

- (1) Enable USB debugging (ADB connection) of ET-L10.
- (2) Install ET-L10 USB driver to the PC.

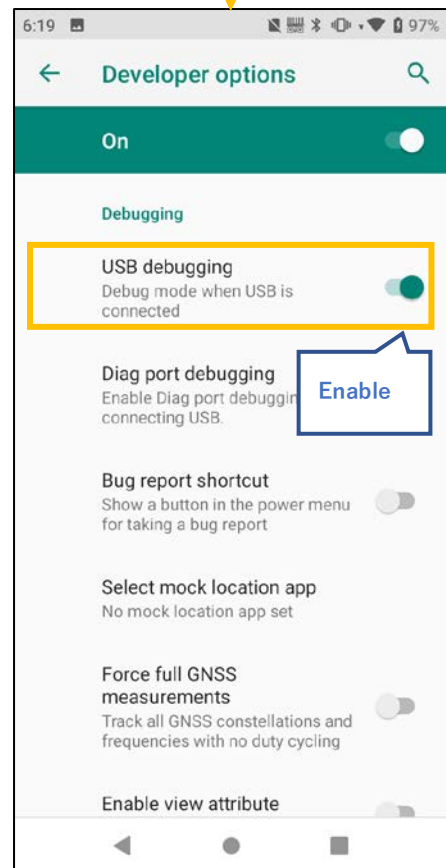
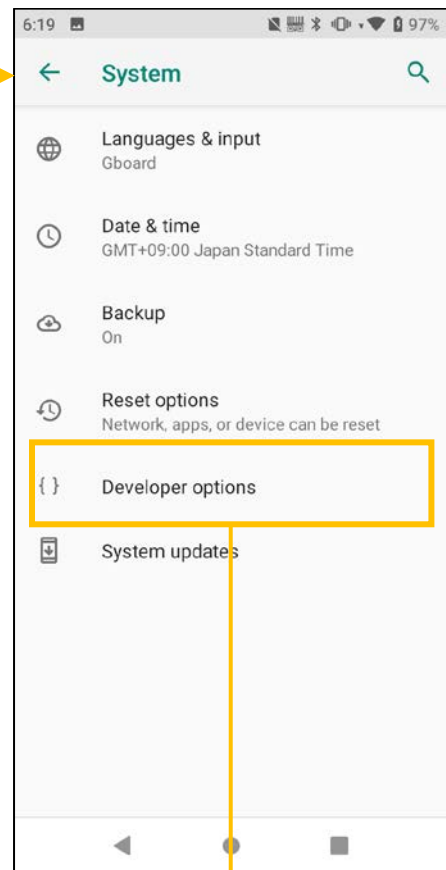
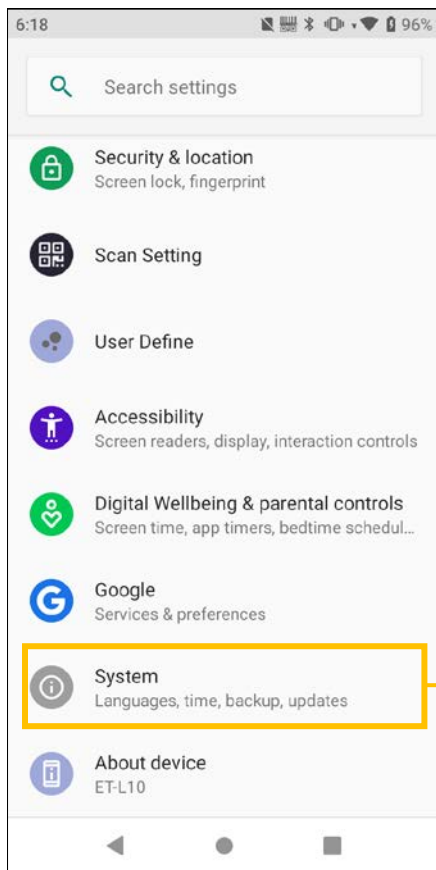
Enabling USB debugging

Since USB debugging is a function for developers, need to activate the Developer options by the following procedure first.

Open [Settings] -> [About phone] and tap "Build number" on the bottom line seven times, [Developer options] is added above [About phone].



Open [Settings] -> [About phone] -> [Developer options] and enable "USB debugging".



Installing USB driver

Install the USB driver for connecting the ET-L10 and PC with the ADB (Android Debug Bridge) protocol.

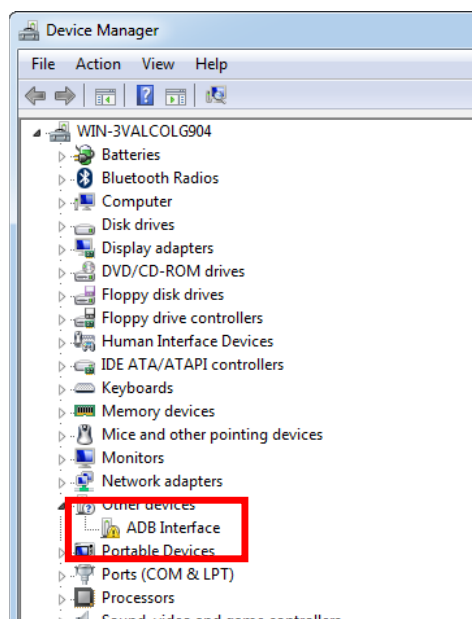
Files necessary for installation are downloaded as described in "3.2.2 Android SDK and USB driver (p.12)".

Skip from this procedure to "Debugging on ET-L10 (p.21)" in case of recognizing ET-L10 as ADB on PC.

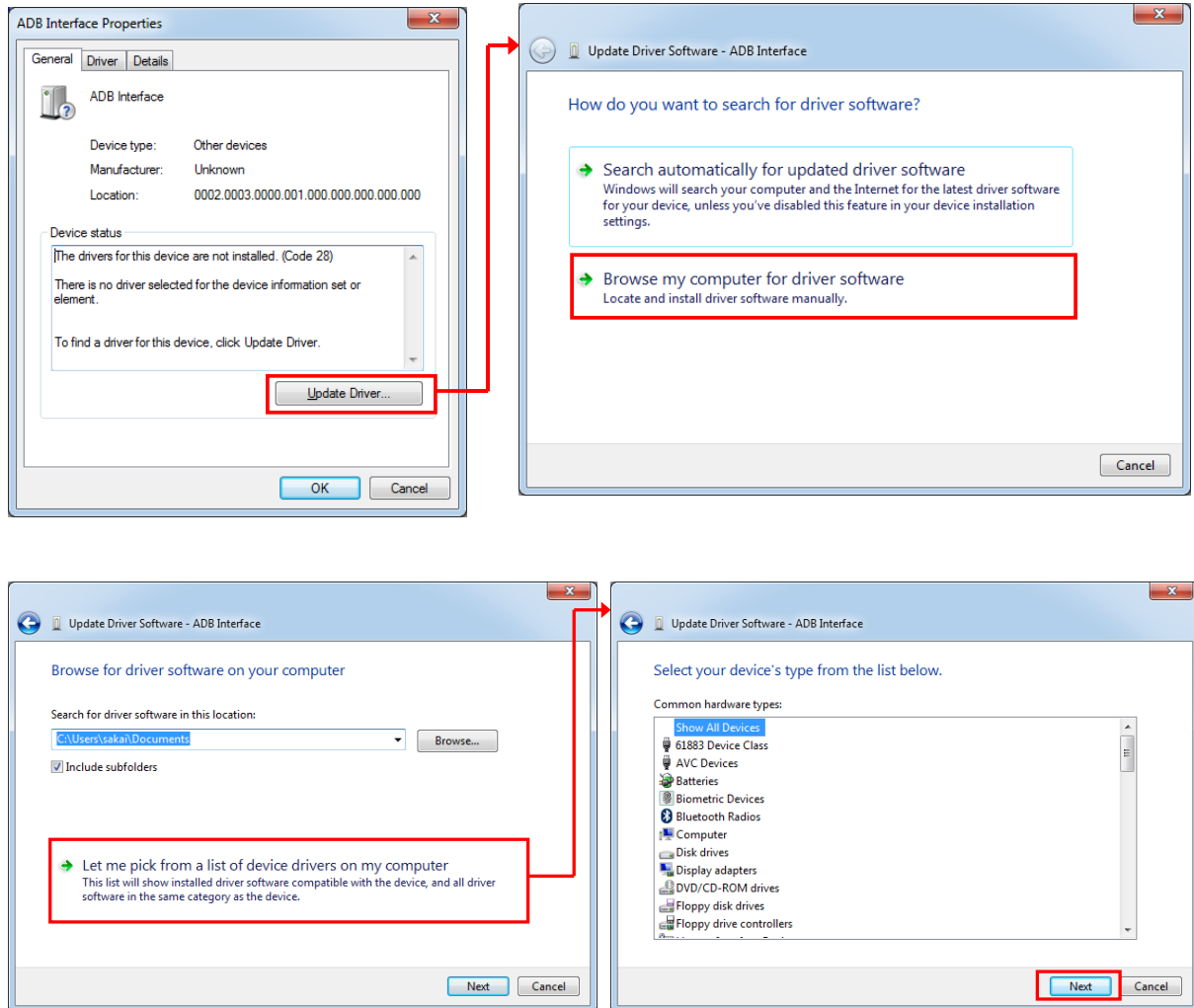
Connect the ET-L10 to a PC using a USB cable.

Then, open the Device Manager by [Control Panel] -> [Hardware and Sound] -> [Device Manager].

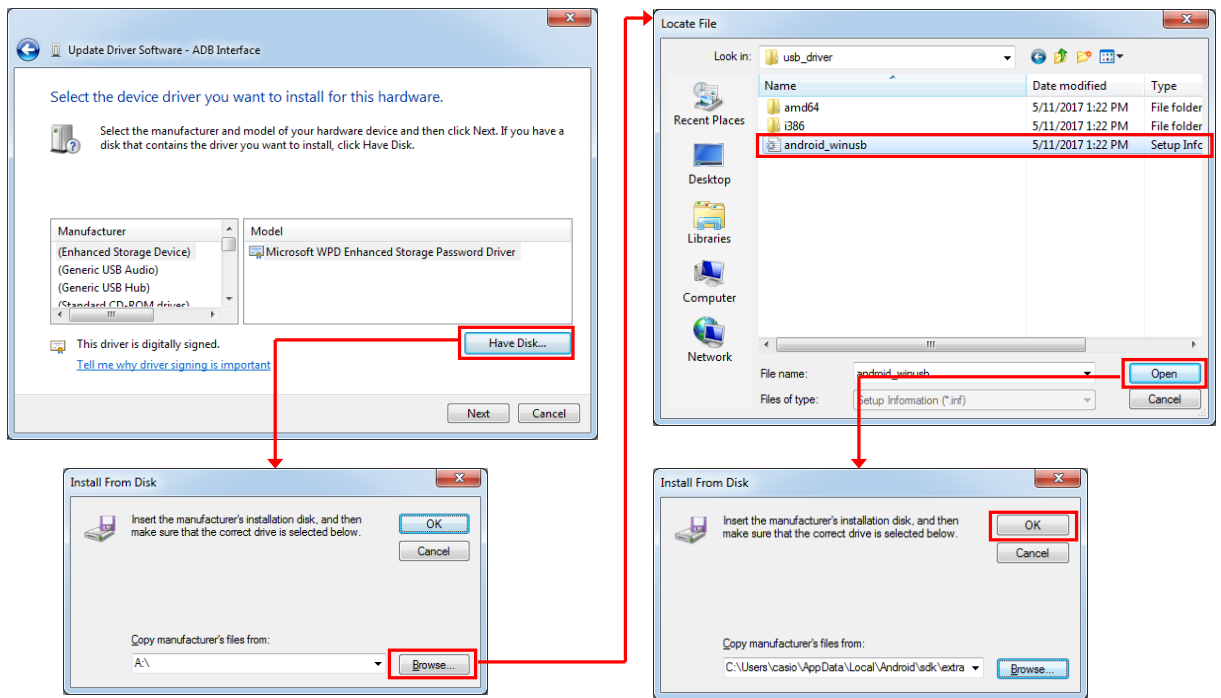
In the Device Manager, "ADB Interface" is displayed as an unknown device as shown below. By right-click the red frame ("Android") in the above figure, displays its properties, and press [Update Driver].



Press "Let me pick from a list of drivers on my computer " at the bottom. In the driver list, with "Show All Devices" is highlighted and press [Next].

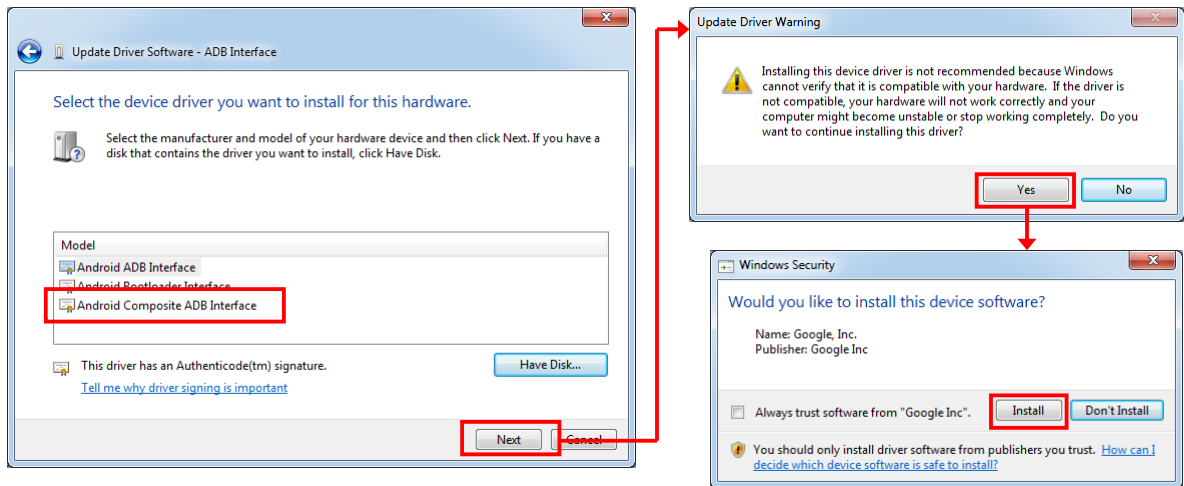


When click [Hard Disk...] in the displayed dialog, a dialog box for specifying the location of the driver opens, so click [Browse...] to open the file dialog box. In the file dialog box, specify the downloaded USB driver in "3.2.2 Android SDK and USB driver (p.12)". (e.g. "extras\google\usb_driver\android_winusb.inf")

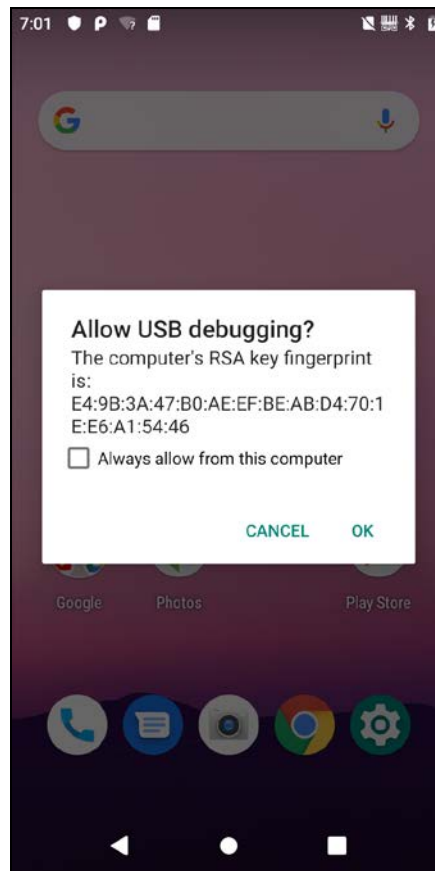


The following driver selection screen will appear. Select "Android Composite ADB Interface" and press [Next].

Answer "Yes" to "Driver Update Warning" and press "Install" of "Windows Security" dialog.

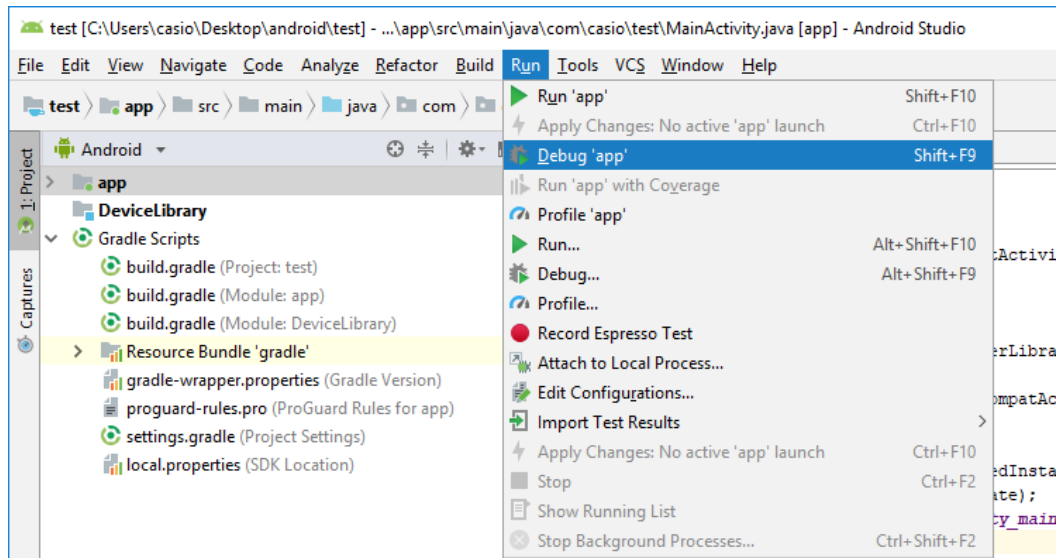


By the above, the installation of the USB driver for ADB protocol was completed. Press "OK" when the follow dialog is shown on ET-L10.



Debugging on ET-L10

Select "Run" -> "Debug 'app'" on Android Studio after connected PC with ET-L10.



When the follow dialog is shown, select "CASIO COMPUTER CO., LTD. ET-L10" from "Available Devices" and press "Run". Start to debug an application on ET-L10.

