



# AN1308: Bluetooth Mesh Interoperability Testing Report

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This document includes the results of the interoperability testing of Silicon Labs' ICs and Bluetooth Mesh stack with Android and iOS smart phones.

The document also has details of the test setup, test cases and extension of the results based on the Bluetooth qualification of the smart phones.

## KEY FEATURES

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- Proxy, Relay, Friend and Low Power Node features tested
- Provisioning, Control and Network Reconfiguration tested
- EFR32xG13, EFR32xG21 and EFR32xG22 tested
- Tested against mobile devices with both Android and iOS across various OS versions

## 1. Test Setup

Tests were performed using Silicon Labs evaluation hardware. Each tested product family was running functionally-equivalent embedded test software. Interoperability against mobile phones running various versions of Android and iOS were tested corresponding to the test specifications listed below. The table below provides the details of the software and hardware that was used to execute the testing.

**Table 1.1. Setup Components**

Setup Component	Version / Board
Bluetooth Mesh SDK (embedded)	1.7.2
Bluetooth Mesh ADK (mobile)	2.3.2
ERF32xG13	BRD4104A Rev A02
ERF32xG21	BRD4181A Rev A01
EFR32xG22	BRD4182A Rev B04
Advertisement noise generators	ORICO USB to Bluetooth 4.0 Adapter

## 2. Test Environment

The overall test environment is shown in the figure below. Table below describes roles for development boards used to support different roles in the mesh network. The mobile phone is used as the provisioner in all cases while the application on the mobile phone is used to control the mesh networks for various test cases that are described in subsequent sections. Each of the reference boards is connected to a PC, which runs the Simplicity Studio development tool. Because in a real-world mesh network a lot of devices might be in radio range, ten devices were used to generate advertising packets and emulate the presence of additional devices in the mesh network.

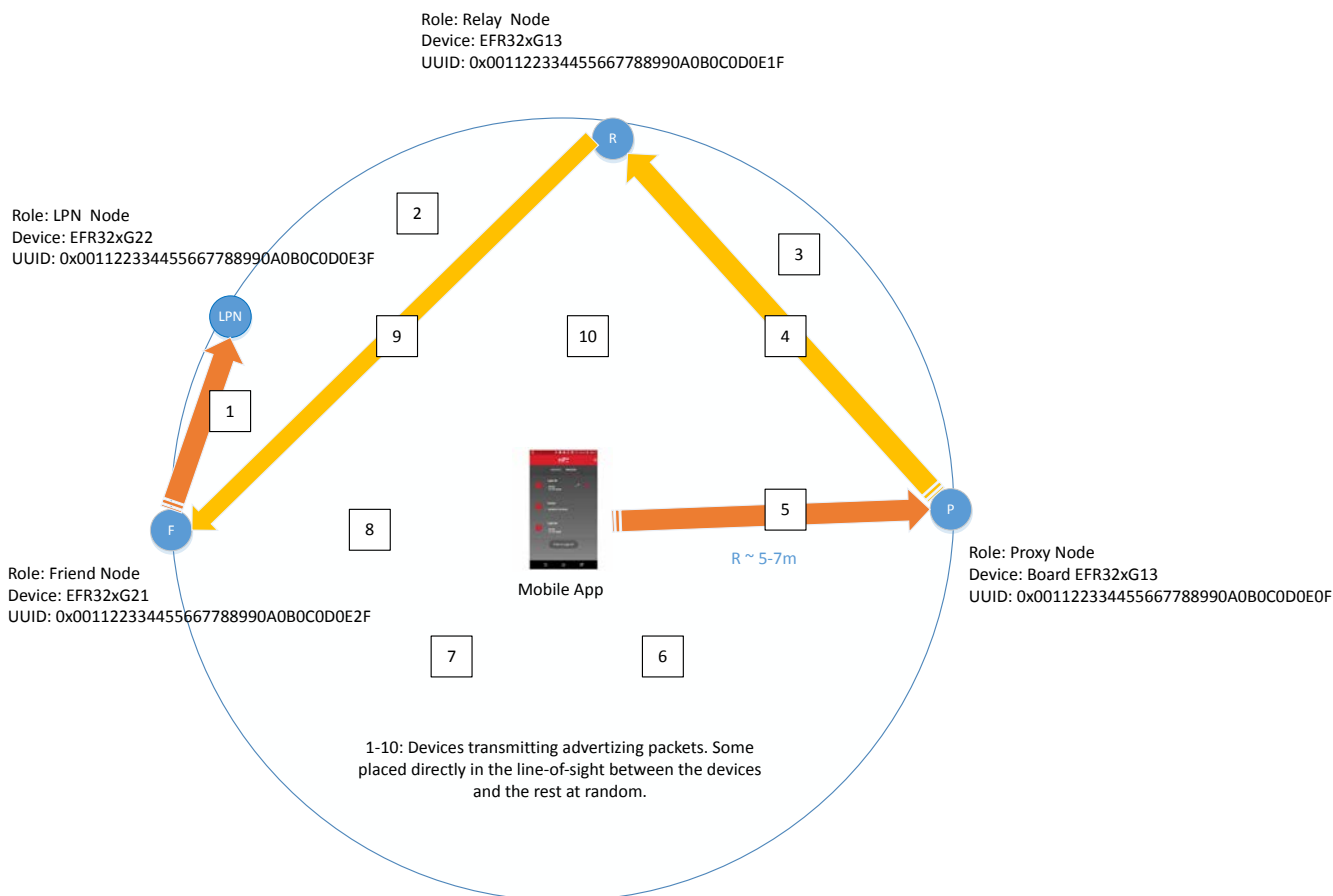


Figure 2.1. Test Environment

Table 2.1. Roles and Devices

Role	Device Used
Proxy	EFR32BG13
Relay	EFR32BG13
Friend	EFR32BG21
Low Power Node	EFR32BG22
Provisioner	Mobile Phone

### 3. Test Case

Table below provides test case details. All test cases were executed using the setup described in section 2. [Test Environment](#) with multiple phones. Test cases are designed to test interoperability only between the mobile phones and Silicon Labs Bluetooth mesh implementation.

**Note:**

1. The UUIDs provided in the below table relate to the devices and roles described in [Figure 2.1 Test Environment on page 3](#).
2. Devices transmitting advertizing packets were configured to have 60 ms advertising interval in all of the cases below.

**Table 3.1. Test Case Details**

Test ID	Test Sub-Type	Configuration	Test Procedure	Pass Criteria
<b>Test Type - Provisioning</b>				
1.1	PB-GATT Beaconsing Scan Mode Low Latency	Device: Set to beaconsing with PB-GATT with specific UUID 0x000102030405060708090A0B0C0E0F.  Mobile: set Scan mode of mobile phone to SCAN_MODE_LOW_LATENCY.	Mobile starts scanning for device and checks if the device with correct UUID is found.	Pass: Found device with UUID = 0x000102030405060708090A0B0C0E0F within 1500ms  Max Retries: 3
1.2	PB-ADV, PB-GATT Beaconsing Scan Mode Low Latency	Device: Set to beaconsing with both PB-ADV, PB-GATT with specific UUID 0x000102030405060708090A0B0C0E1F  Mobile: Set scan mode of mobile phone to SCAN_MODE_LOW_LATENCY.	Mobile starts scanning for device and checks if the device with correct UUID is found.	Pass: Found device with UUID = 0x000102030405060708090A0B0C0E1F in 2500ms  Max Retries: 3
1.3	PB-ADV, PB-GATT Beaconsing Scan Mode Low Power	Device: Set to beaconsing with both PB-ADV, PB-GATT with specific UUID: 0x000102030405060708090A0B0C0E2F  Mobile: Set scan mode of mobile phone to SCAN_MODE_LOW_POWER.	Mobile starts scanning for device and checks if the device with correct UUID is found.	Pass: Found device with UUID = 0x000102030405060708090A0B0C0E2F in 1500ms for iOS and 4000ms for Android  Max Retries: 3
1.4	PB-ADV, PB-GATT Beaconsing Scan Mode Balanced	Device: Set to beaconsing with both PB-ADV, PB-GATT with specific UUID : 0x000102030405060708090A0B0C0E3F  Mobile: Scan mode of mobile phone to SCAN_MODE_BALANCED.	Mobile starts scanning for device and checks if the device with correct UUID is found.	Pass: Found device with UUID = 0x000102030405060708090A0B0C0E3F in 1500ms for iOS and 5500ms for Android  Max Retries: 3

Test ID	Test Sub-Type	Configuration	Test Procedure	Pass Criteria
1.5	Authentication with no OOB	Device: UUID: 0x000102030405060708090A0B0C0E0F Set to No OOB  Mobile: Provisions with no OOB authentication mode.	Mobile starts provisioning with no OOB Mobile configures node:  Binds to "IOP Test Group"  Enables Proxy feature  Disables other features  Enables retransmission  Binds Appkey to model Generic OnOff Server model.	Pass: Provisioning successful in 10s  Max Retries: 3
1.6	Authentication with Static OOB	Device: UUID: 0x000102030405060708090A0B0C0E1F Fix static value of the authentication mode with value: 0112233445566778899aabbccddeeff (Static OOB) Mobile: Use this value for authentication.	Mobile starts provisioning with static OOB using the same value as device is configured to. Mobile configures node:  Binds to "IOP Test Group"  Enables Relay feature  Disables other features,  Enables retransmission,  Binds Appkey to Generic OnOff Server model	Pass: Provisioning successful in 10s.  Max Retries: 3

Test ID	Test Sub-Type	Configuration	Test Procedure	Pass Criteria
1.7	Authentication with output OOB	<p>Device</p> <p>UUID: 0x000102030405060708090A0B0C0E2F</p> <p>Authentication mode set to output OOB.</p> <p>Mobile: Use output OOB for authentication.</p>	<p>Mobile starts provisioning with output OOB.</p> <p>Device generates random number and show 4 digits on LCD</p> <p>User inputs those 4 digits that number on mobile for authentication</p> <p>Mobile configures node:</p> <p>Binds to "IOP Test Group"</p> <p>Enables Friend feature</p> <p>Disables other features,</p> <p>Enables retransmission,</p> <p>Binds Appkey to Generic OnOff Server model</p>	<p>Pass: Provisioning successful in 30s</p> <p>Max Retries: 3</p>
1.8	Authentication with input OOB	<p>Device</p> <p>UUID: 0x000102030405060708090A0B0C0E3F</p> <p>Authentication mode set to input OOB.</p>	<p>Mobile start provisioning with input OOB.</p> <p>Mobile generates and outputs a random number between 0 and 10.</p> <p>User input the random number by pressing PB0 button appropriate number of times.</p> <p>User press button PB1 for confirmation and continue provision process.</p> <p>Mobile configures node:</p> <p>Binds to "IOP Test Group"</p> <p>Enables LPN feature</p> <p>Disables other features</p> <p>Enable retransmissions</p> <p>Bind Appkey to Generic OnOff Server model</p>	<p>Pass: Provisioning successful in 30s</p> <p>Max Retries: 3</p>

Test ID	Test Sub-Type	Configuration	Test Procedure	Pass Criteria
<b>Test Type: Unicast and Multicast Control</b>				
2.1	Unicast Control of Proxy Node with ACK	Device UUID = 0x000102030405060708090A0B0C0E0F Provisioned as in Test ID 1.5.  Mobile: to use “with ACK” and parameters transition time = 0, delay time = 0.	- Mobile sends Set command with Ack to set state to ON addressing the Proxy node.	Pass: Received success for setting ON state.
2.2	Unicast Control of Proxy Node without ACK	Device: UUID = 0x000102030405060708090A0B0C0E0F Provisioned as in Test ID 1.5.  Mobile: to use “without ACK” and parameters transition time = 0, delay time = 0. Use Get command to get status.	- Mobile sends Set command without Ack to set state to OFF addressing the Proxy node.  - Mobile sends Get command	Pass: Mobile receives success for setting OFF state in 180ms.  Max Retries: 3
2.3	Unicast Control of Relay Node with ACK	Device UUID = 0x000102030405060708090A0B0C0E1F Provisioned as in Test ID 1.6.  Mobile: to use “with ACK” and parameters transition time = 0, delay time = 0	- Mobile sends Set command with Ack to set state to ON addressing the Relay node.	Pass: Received success for setting ON state.
2.4	Unicast Control of Relay Node without ACK	Device UUID = 0x000102030405060708090A0B0C0E1F Provisioned as in Test ID 1.6.  Mobile: to use “without ACK” and parameters transition time = 0, delay time = 0. Use Get command to get status.	- Mobile sends Set command without Ack to set state to OFF addressing the Relay node.  - Mobile sends Get command	Pass: Mobile receives success for setting OFF state in 180ms.  Max Retries: 3
2.5	Unicast Control of Friend Node with ACK	Device UUID = 0x000102030405060708090A0B0C0E2F Provisioned as in Test ID 1.7.  Mobile: to use “with ACK” and parameters transition time = 0, delay time = 0.	- Mobile sends Set command with Ack to set state to ON addressing the Friend node.	Pass: Received success for setting ON state.
2.6	Unicast Control of Friend Node without ACK	Device UUID = 0x000102030405060708090A0B0C0E2F Provisioned as in Test ID 1.7.  Mobile: to use “without ACK” and parameters transition time = 0, delay time = 0. Use Get command to get status.	- Mobile sends Set command without Ack to set state to OFF addressing the Friend node.  - Mobile sends Get command	Pass: Mobile receives success for setting OFF state in 180ms.  Max Retries: 3
2.7	Unicast Control of LPN Node with ACK	Device UUID = 0x000102030405060708090A0B0C0E3F Provisioned as in Test ID 1.8.  Mobile: to use “with ACK” and parameters transition time = 0, delay time = 0.	- Mobile sends Set command with Ack to set state to ON addressing the Low Power node.	Pass: Received success for setting ON state.

Test ID	Test Sub-Type	Configuration	Test Procedure	Pass Criteria
2.8	Unicast Control of LPN Node without ACK	<p>Device</p> <p>UUID = 0x000102030405060708090A0B0C0E3F</p> <p>Provisioned as in Test ID 1.8.</p> <p>Mobile: to use “without ACK” and parameters transition time = 0, delay time = 0. Use Get command to get status.</p>	<p>- Mobile sends Set command without Ack to set state to OFF addressing the Low Power node.</p> <p>- Mobile sends Get command</p>	<p>Pass: Mobile receives success for setting OFF state in 180ms.</p> <p>Max Retries: 3</p>
2.9	Multicast Control of all 4 nodes	<p>Devices:</p> <p>Provisioned as per Test ID: 1.5 to 1.8</p> <p>Mobile:</p> <p>To use multicast with UNACK.</p>	<p>Mobile sends Set command with UNACK to set state of all the devices to ON addressing the “IOP Test Group”</p> <p>Mobile sends Get command to read state of all the devices</p> <p>Mobile sends Set command with UNACK to set state of devices to OFF addressing the “IOP Test Group”</p> <p>Mobile sends Get command to read state of all the devices</p>	<p>Pass: Received success for setting ON / OFF state in 180ms</p> <p>Max Retries: 5</p>
<b>Test Type: Reconfiguration of the network</b>				
3.1	Removing nodes from network	<p>Devices:</p> <p>Provisioned as in Test ID: 1.5 to 1.8 with respective UUIDS</p> <p>Mobile:</p> <p>To remove two nodes from the network</p>	<p>- Mobile removes LPN node with UUID: 0x000102030405060708090A0B0C0E3F</p> <p>- Mobile removes Friend node with UUID: 0x000102030405060708090A0B0C0E2F</p>	<p>Pass: There is no error and only 2 devices left in subnet.</p>



Test ID	Test Sub-Type	Configuration	Test Procedure	Pass Criteria
3.2	Adding node to the network	<p>Devices:</p> <p>Proxy and Relay nodes provisioned as in Test ID 1.5 and 1.6</p> <p>Mobile:</p> <p>To add one node into the network.</p>	<p>- Mobile provisions device with UUID: 0x000102030405060708090A0B0C0E2F and as a normal node.</p> <p>- Mobile sends Set command with ack to set state of new node to ON</p> <p>- Mobile sends Set command with ack to set state of new node to OFF</p>	<p>Pass: The state of new node changes to ON then OFF</p> <p>Max Retries: 3</p>
3.3	Reconnection	<p>Devices:</p> <p>Proxy and Relay nodes provisioned as in Test ID 1.5 and 1.6</p> <p>Normal node provisioned as in Test ID 3.2</p> <p>Mobile:</p> <p>To disconnect Proxy node and reconnect again.</p>	<p>-Mobile disconnects Proxy node from network</p> <p>-Mobile reconnects Proxy Node to the network</p>	<p>Pass: Reconnection is successful in 30s</p> <p>Max Retries: 3</p>
3.4	Remove all nodes from the network	<p>Devices:</p> <p>Proxy and Relay nodes provisioned as in Test ID 1.5 and 1.6</p> <p>Normal node provisioned as in Test ID 3.2</p> <p>Mobile:</p> <p>To removes all nodes from the network</p>	<p>- Mobile removes all nodes from subnets</p> <p>- Mobile scans and found 4 un-provisioned devices</p>	<p>Pass: Found 4 un-provisioned devices with UUID: 0x000102030405060708090A0B0C0E0F, 0x000102030405060708090A0B0C0E1F, 0x000102030405060708090A0B0C0E2F, 0x000102030405060708090A0B0C0E3F.</p>

## 4. Test Results

### 4.1 Tested Phones

This section provides a list of phones and relevant information against which all test cases were executed.

### 4.2 Summary of Tested Phones

Table below shows a high-level view of the phones tested across iOS and Android platforms. Note that the choice of the version numbers was made to provide a wide coverage. The earliest iOS version tested was 12.3, which was released in May 2019 and latest version is 14.2, which was released in October 2020. This included older devices like iPhone 5s which were released in 2013 upgraded to newer version of the OS. iPhone 11 pro was the latest of the iOS devices tested. Similarly, Android OS versions coverage ranged from 6.0 released in Oct 2015 to Android 10 released in Sep 2019, which at the time of testing was the latest of the generally available Android versions. The Android phones were sourced from various manufacturers across the world.

**Table 4.1. Test Results Summary**

OS Platform	Number of Phones	Version Coverage
iOS	17	OS Version: 12.3, 12.4.8, 13.3.1, 13.4.1, 13.5.1, 13.6.1, 13.7, 14.2
Android	72	OS Version: 6.0, 6.0.1, 7.0, 7.1.1, 8.0.0, 8.1.0, 9, 10 API Level: 23, 24, 25, 26, 27, 28, 29

### 4.3 Details of Tested Phones

**Note:**

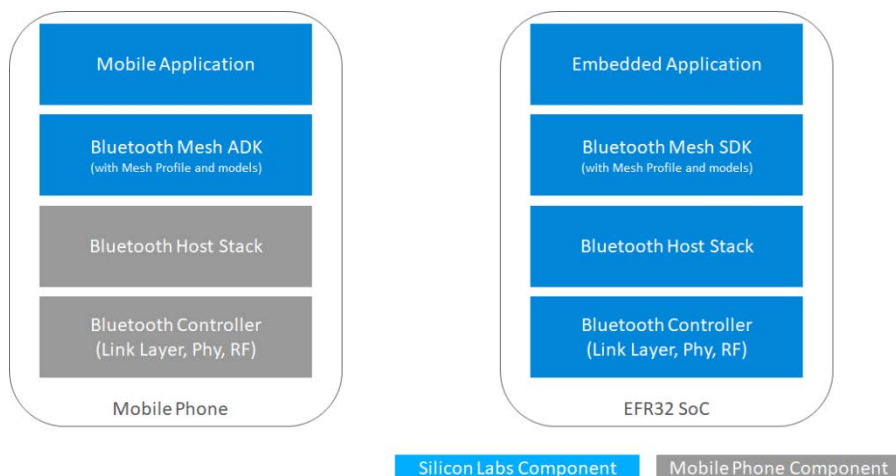
1. Phone code is provided by the phone and extracted using specific APIs.
2. For Android, read the OS version as Android\_SDK: <API\_Level>\_(<Android version>).

Phone code	OS version	Test ID: 1.1 - 1.8	Test ID: 2.1-2.9	Test ID: 3.1-3.4
OnePlus_GM1925	Android_SDK:_28_(9)	Pass	Pass	Pass
OnePlus_IN2020	Android_SDK:_29_(10)	Pass	Pass	Pass
LGE_LGM_G600L	Android_SDK:_28_(9)	Pass	Pass	Pass
Samsung_SM-T295	Android_SDK:_28_(9)	Pass	Pass	Pass
Google_Pixel	Android_SDK:_28_(9)	Pass	Pass	Pass
Google_Pixel_2	Android_SDK:_29_(10)	Pass	Pass	Pass
Google_Pixel_2_XL	Android_SDK:_28_(9)	Pass	Pass	Pass
Google_Pixel_3	Android_SDK:_29_(10)	Pass	Pass	Pass
Google_Pixel_3_XL	Android_SDK:_29_(10)	Pass	Pass	Pass
Google_Pixel_XL	Android_SDK:_29_(10)	Pass	Pass	Pass
HUAWEI_COR_AL10	An-droid_SDK:_27_(8.1.0)	Pass	Pass	Pass
HUAWEI_DRA_AL00	An-droid_SDK:_27_(8.1.0)	Pass	Pass	Pass
HUAWEI_INE-LX2	Android_SDK:_28_(9)	Pass	Pass	Pass
HUAWEI_WAS_AL00	An-droid_SDK:_26_(8.0.0)	Pass	Pass	Pass
HUAWEI_MAR-LX2	Android_SDK:_28_(9)	Pass	Pass	Pass
HUAWEI_DUB_LX2	An-droid_SDK:_27_(8.1.0)	Pass	Pass	Pass
LGE_LG-H818	Android_SDK:_23_(6.0)	Pass	Pass	Pass
Xiaomi_Mi_10_Pro	Android_SDK:_29_(10)	Pass	Pass	Pass
Nexus 5	An-droid_SDK:_23_(6.0.1)	Pass	Pass	Pass
OPPO_CPH1923	Android_SDK:_28_(9)	Pass	Pass	Pass
OPPO_CPH1912	An-droid_SDK:_27_(8.1.0)	Pass	Pass	Pass
OppO_CPH1905	An-droid_SDK:_27_(8.1.0)	Pass	Pass	Pass
OPPO_CPH1987	Android_SDK:_28_(9)	Pass	Pass	Pass
OPPO_CPH1917	Android_SDK:_29_(10)	Pass	Pass	Pass
HUAWEI_ELS_NX9	Android_SDK:_29_(10)	Pass	Pass	Pass
Xiaomi_Redmi_5_Plus	An-droid_SDK:_27_(8.1.0)	Pass	Pass	Pass
Xiaomi_Redmi_6_Pro	An-droid_SDK:_27_(8.1.0)	Pass	Pass	Pass
Xiaomi_Redmi_7	Android_SDK:_28_(9)	Pass	Pass	Pass

Phone code	OS version	Test ID: 1.1 - 1.8	Test ID: 2.1-2.9	Test ID: 3.1-3.4
Xiaomi_Redmi_K20_Pro_Premium_Edition	Android_SDK:_29_(10)	Pass	Pass	Pass
Xiaomi_Redmi_K30_Pro	Android_SDK:_29_(10)	Pass	Pass	Pass
Xiaomi_Redmi_Note_8	Android_SDK:_28_(9)	Pass	Pass	Pass
Xiaomi_Redmi_Note_5	Android_SDK:_28_(9)	Pass	Pass	Pass
Samsung_SM-G988B	Android_SDK:_29_(10)	Pass	Pass	Pass
Samsung_SM-A105G	Android_SDK:_29_(10)	Pass	Pass	Pass
Samsung_SM-A107F	Android_SDK:_28_(9)	Pass	Pass	Pass
Samsung_SM-A305F	Android_SDK:_28_(9)	Pass	Pass	Pass
Samsung_SM-A505F	Android_SDK:_28_(9)	Pass	Pass	Pass
SM-A515F	Android_SDK:_29_(10)	Pass	Pass	Pass
Samsung_SM-A605G	Android_SDK:_26_(8.0.0)	Pass	Pass	Pass
Samsung_SM-A750GN	Android_SDK:_26_(8.0.0)	Pass	Pass	Pass
Samsung_SM-A705F	Android_SDK:_28_(9)	Pass	Pass	Pass
Samsung_SM-A805F	Android_SDK:_28_(9)	Pass	Pass	Pass
Samsung_SM-A920F	Android_SDK:_29_(10)	Pass	Pass	Pass
Samsung_SM-J510FN	Android_SDK:_25_(7.1.1)	Pass	Pass	Pass
Samsung_SM-J710F	Android_SDK:_23_(6.0.1)	Pass	Pass	Pass
Samsung_SM-M205G	Android_SDK:_28_(9)	Pass	Pass	Pass
Samsung_SM-N950F	Android_SDK:_28_(9)	Pass	Pass	Pass
Samsung_SM-N960F	Android_SDK:_29_(10)	Pass	Pass	Pass
Samsung_SM-G975F	Android_SDK:_29_(10)	Pass	Pass	Pass
SM-G970F	Android_SDK:_29_(10)	Pass	Pass	Pass
Samsung_SM-G930F	Android_SDK:_26_(8.0.0)	Pass	Pass	Pass
Samsung_SM-G935F	Android_SDK:_26_(8.0.0)	Pass	Pass	Pass
Samsung_SM-G950F	Android_SDK:_26_(8.0.0)	Pass	Pass	Pass
Samsung_SM-G955F	Android_SDK:_26_(8.0.0)	Pass	Pass	Pass
LGE_VS995	Android_SDK:_24_(7.0)	Pass	Pass	Pass
LGE_LG-H931	Android_SDK:_28_(9)	Pass	Pass	Pass
Xiaomi_MI_9	Android_SDK:_28_(9)	Pass	Pass	Pass
Xiaomi_Mi_9T	Android_SDK:_29_(10)	Pass	Pass	Pass
Xiaomi_Mi_A2_Lite	Android_SDK:_27_(8.1.0)	Pass	Pass	Pass

Phone code	OS version	Test ID: 1.1 - 1.8	Test ID: 2.1-2.9	Test ID: 3.1-3.4
Xiaomi_MI_6	Android_SDK:_28_(9)	Pass	Pass	Pass
Xiaomi_MI_6X	An-droid_SDK:_27_(8.1.0)	Pass	Pass	Pass
Xiaomi_MI_8	Android_SDK:_28_(9)	Pass	Pass	Pass
Xiaomi_Mi9_Pro_5G	Android_SDK:_28_(9)	Pass	Pass	Pass
Xiaomi_MI_9_SE	Android_SDK:_28_(9)	Pass	Pass	Pass
Xiaomi_MI_MAX_3	An-droid_SDK:_27_(8.1.0)	Pass	Pass	Pass
Xiaomi_MI_8_Lite	An-droid_SDK:_27_(8.1.0)	Pass	Pass	Pass
Xiaomi_Mi_A2	Android_SDK:_28_(9)	Pass	Pass	Pass
Xiaomi_Mi_A3	Android_SDK:_29_(10)	Pass	Pass	Pass
Xiaomi_Mi_MIX_3_5G	Android_SDK:_28_(9)	Pass	Pass	Pass
Xiaomi_MIX_2S	Android_SDK:_28_(9)	Pass	Pass	Pass
Xiaomi_Redmi_7A	Android_SDK:_28_(9)	Pass	Pass	Pass
Redmi Note 7	Android_SDK:_29_(10)	Pass	Pass	Pass
iPhone 8 Plus	iOS 14.2	Pass	Pass	Pass
iPhone 5S	iOS 12.4.8	Pass	Pass	Pass
iPhone 6	iOS 12.4.8	Pass	Pass	Pass
iPhone X	IOS 13.6.1	Pass	Pass	Pass
iPhone 7 Plus	iOS 14.2	Pass	Pass	Pass
iPhone Xs	IOS 13.5.1	Pass	Pass	Pass
iPhone 8	iOS 13.5.1	Pass	Pass	Pass
iPhone 6 Plus	iOS 12.4.8	Pass	Pass	Pass
iPhone 7	iOS 13.7	Pass	Pass	Pass
iPhone 6S	iOS 13.7	Pass	Pass	Pass
iPhone SE (2nd generation)	iOS 13.5.1	Pass	Pass	Pass
iPhone 11 Pro	iOS 14.2	Pass	Pass	Pass
iPad mini (5th generation)	iOS 13.4.1	Pass	Pass	Pass
iPad (7th generation)	iOS 13.4.1	Pass	Pass	Pass
iPad Air(3rd generation)	iOS 13.3.1	Pass	Pass	Pass
iPAD 11 Pro	iOS 13.5.1	Pass	Pass	Pass
iPhone XS Max	iOS 12.3	Pass	Pass	Pass

#### 4.4 Extended Set of Phones



**Figure 4.1. High Level System Architecture**

While testing was done on a limited set of phones, the results can be extended to infer wider interoperability considering the overall system architecture and the Bluetooth qualification process.

Figure above provides a high-level architecture of the different components used in testing on the mobile phones and on the EFR32 SoCs. While it is evident that the respective components interact with each other, note that the Bluetooth mesh implementation is provided by Silicon Labs on both devices.

Bluetooth Controller and Bluetooth Host Stack components vary across different phones. The Bluetooth qualification process states that “If an organization produces more than one product that incorporates the same Bluetooth design, those additional products can be listed within the same qualification at no additional cost”. See <https://www.bluetooth.com/develop-with-bluetooth/qualification-listing/> for more information. This is used by several companies to qualify different models of the mobile phones using the same qualification ID when the Bluetooth design is the same. With reference to the figure above, the Bluetooth design refers to the combination of the Controller and the Host Stack.

Considering both the Bluetooth architecture and qualification process, it can be reasonably inferred that mobile phones, which share the same qualification ID with the phones used for testing will exhibit the same behavior and the same level of interoperability.

Table below provides a list of 2,242 devices arranged by qualification ID, which they share with one of the phones used for testing.

**Table 4.2. Extended Phone List**

Phone code	OS version	Qualification Reference	Models with Shared Qualification
OnePlus_GM1925	Android_SDK:_28_(9)	128467 - End Product	OnePlus 7 Pro, GM1915 OnePlus 7 Pro, GM1913 OnePlus 7 Pro, GM1917 OnePlus 7 Pro 5G, GM1920 OnePlus 7 Pro 5G, GM1925 OnePlus 7 Pro, GM1911 OnePlus 7 Pro, GM1910 OnePlus 7, GM1900 OnePlus 7, GM1903 OnePlus 7, GM1901

Phone code	OS version	Qualification Reference	Models with Shared Qualification
OnePlus_IN2020	Android_SDK:_29_(10)	144662 - End Product	Smart Phone, IN2017 OnePlus 8 5G UW, IN2019 OnePlus 8, IN2015 OnePlus 8, IN2013 OnePlus 8, IN2010 OnePlus 8, IN2011 OnePlus 8 Pro, IN2020 OnePlus 8 Pro, IN2021 OnePlus 8 Pro, IN2023 OnePlus 8 Pro, IN2025
LGE_LGM_G600L	Android_SDK:_28_(9)	92094 - End Product	LG Mobile Phone, LGM-G600L LG Mobile Phone, LGM-G600K LG Mobile Phone, LGM-G600S LG Mobile Phone, LGM-G600LR LG Mobile Phone, LGM-G600SR LG Mobile Phone, LGM-G600KR LG Mobile Phone, LGM-G600LP LG Mobile Phone, LGM-G600SP LG Mobile Phone, LGM-G600KP
Samsung_SM-T295	Android_SDK:_28_(9)	134106 - End Product	Galaxy Tab A, SM-T295 Galaxy Tab A, SM-T295N Galaxy Tab A, SM-T297 Galaxy Tab A, SM-T295C Galaxy Tab A, SM-T290
Google_Pixel	Android_SDK:_28_(9)	85767 - End Product	Pixel, Pixel Pixel XL, Pixel XL
Google_Pixel_2	Android_SDK:_29_(10)	98278 - End Product	Pixel 2, G011A
Google_Pixel_2_XL	Android_SDK:_28_(9)	98638 - End Product	LG Mobile Phone, G011C
Google_Pixel_3	Android_SDK:_29_(10)	111802 - Controller Subsystem 115459 - Host Subsystem	Pixel 3, G013A Pixel 3, G013B Pixel 3 XL, G013C Pixel 3 XL, G013D
Google_Pixel_3_XL	Android_SDK:_29_(10)	122387 - Profile Subsystem 111802 - Controller Subsystem 115459 - Host Subsystem	Pixel 3a XL, G020A G020B G020C G020D Pixel 3a, G020E G020F G020G G020H
Google_Pixel_XL	Android_SDK:_29_(10)	85767 - End Product	Pixel, Pixel Pixel XL, Pixel XL

Phone code	OS version	Qualification Reference	Models with Shared Qualification
			COL-AL10, COL-AL10 COL-AL00, COL-AL00 COL-TL10, COL-TL10 COL-TL00, COL-TL00 COL-L29, COL-L29 Smart Phone,Honor, COR-TL00 Smart Phone,Honor, COR-AL00 Smart Phone,Honor, COR-AL10 Smart Phone,Honor, COR-L29 Smart Phone, HUAWEI, PAR-AL00 Smart Phone, HUAWEI, PAR-TL00 Smart Phone, HUAWEI, PAR-LX1 Smart Phone, HUAWEI, PAR-LX9 Smart Phone, HUAWEI, PAR-LX1M Smart Phone, HUAWEI, PAR-TL20 Smart Phone, HUAWEI, INE-AL00 Smart Phone, HUAWEI, INE-TL00 Smart Phone, HUAWEI, SNE-AL00 Smart Phone, HUAWEI, INE-LX1 Smart Phone, HUAWEI, INE-LX2 Smart Phone, HUAWEI, SNE-LX1 Smart Phone, HUAWEI, SNE-LX2 Smart Phone, HUAWEI, SNE-LX3 Smart Phone, HUAWEI, JKM-LX1 Smart Phone, HUAWEI, JKM-LX2 Smart Phone, HUAWEI, JKM-LX3 Smart Phone, HUAWEI, JKM-TL00 Smart Phone, HUAWEI, JKM-AL00 Smart Phone, HUAWEI, JKM-AL00a Smart Phone, HUAWEI, JKM-AL00b Smart Phone, HONOR, JSN-AL00 Smart Phone, HONOR, JSN-AL00a Smart Phone, HONOR, JSN-TL00 Smart Phone, HONOR, JSN-L21 Smart Phone, HONOR, JSN-L22 Smart Phone, HONOR, JSN-L42



Phone code	OS version	Qualification Reference	Models with Shared Qualification
HUAWEI_DRA_AL00	Android_SDK:_27_(8.1.0)	101927 - Host Subsystem 67572 - Controller Subsystem 96540 - Profile Subsystem 104712 - Profile Subsystem	DRA-LX2, DRA-LX2 DRA-TL00, DRA-TL00 DRA-AL00, DRA-AL00 DUA-AL00, DUA-AL00 DUA-TL00, DUA-TL00 DRA-L01, DRA-L01 DRA-L21, DRA-L21 DRA-LX3, DRA-LX3 DUA-L22, DUA-L22 DUA-LX3, DUA-LX3 BG2-W09, BG2-W09 Smart Phone, HUAWEI, DRA-LX5 Smart Phone, HONOR, DUA-L32 HUAWEI/HONOR Smart Phone, DUA-LX5

Phone code	OS version	Qualification Reference	Models with Shared Qualification
			COL-AL10, COL-AL10 COL-AL00, COL-AL00 COL-TL10, COL-TL10 COL-TL00, COL-TL00 COL-L29, COL-L29 Smart Phone,Honor, COR-TL00 Smart Phone,Honor, COR-AL00 Smart Phone,Honor, COR-AL10 Smart Phone,Honor, COR-L29 Smart Phone, HUAWEI, PAR-AL00 Smart Phone, HUAWEI, PAR-TL00 Smart Phone, HUAWEI, PAR-LX1 Smart Phone, HUAWEI, PAR-LX9 Smart Phone, HUAWEI, PAR-LX1M Smart Phone, HUAWEI, PAR-TL20 Smart Phone, HUAWEI, INE-AL00 Smart Phone, HUAWEI, INE-TL00 Smart Phone, HUAWEI, SNE-AL00 Smart Phone, HUAWEI, INE-LX1 Smart Phone, HUAWEI, INE-LX2 Smart Phone, HUAWEI, SNE-LX1 Smart Phone, HUAWEI, SNE-LX2 Smart Phone, HUAWEI, SNE-LX3 Smart Phone, HUAWEI, JKM-LX1 Smart Phone, HUAWEI, JKM-LX2 Smart Phone, HUAWEI, JKM-LX3 Smart Phone, HUAWEI, JKM-TL00 Smart Phone, HUAWEI, JKM-AL00 Smart Phone, HUAWEI, JKM-AL00a Smart Phone, HUAWEI, JKM-AL00b Smart Phone, HONOR, JSN-AL00 Smart Phone, HONOR, JSN-AL00a Smart Phone, HONOR, JSN-TL00 Smart Phone, HONOR, JSN-L21 Smart Phone, HONOR, JSN-L22 Smart Phone, HONOR, JSN-L42

Phone code	OS version	Qualification Reference	Models with Shared Qualification
HUAWEI_WAS_AL00	Android_SDK:_26_(8.0.0)	80373 - End Product	, HUAWEI VNS-L31 , HUAWEI VNS-L21 , HUAWEI VNS-L22 , HUAWEI VNS-L23 , HUAWEI VNS-L53 , NEM-AL10 , NEM-TL00 , NEM-TL00H , NEM-UL10 , HUAWEI NMO-L21 , NMO-L21 , HUAWEI NMO-L31 , NMO-L31 , NEM-L21 , NEM-L51 , HUAWEI NMO-L22 , NMO-L22 , NEM-L22 , HUAWEI NMO-L23 , NMO-L23 BTV-DL09, BTV-DL09 BTV-W09, BTV-W09 BLL-L21, BLL-L21 BLL-L22, BLL-L22 BLL-L23, BLL-L23 BLN-AL10, BLN-AL10 BLN-L21, BLN-L21 BLN-L22, BLN-L22 BLN-L24, BLN-L24 BLN-TL00, BLN-TL00 BLN-TL10, BLN-TL10 VEN-L22, VEN-L22 d-01J, d-01J BLN-AL20, BLN-AL20 PRA-LX1, PRA-LX1 PRA-LA1, PRA-LA1 PRA-LX2, PRA-LX2 PRA-LX3, PRA-LX3 PRA-AL00, PRA-AL00 PRA-AL00X, PRA-AL00X PRA-TL10, PRA-TL10 WAS-L03T, WAS-L03T WAS-LX1, WAS-LX1 WAS-LX1A, WAS-LX1A WAS-LX2, WAS-LX2 WAS-LX2J, WAS-LX2J WAS-LX3, WAS-LX3 WAS-AL00, WAS-AL00 WAS-TL10, WAS-TL10 BLN-AL30, BLN-AL30 BLN-AL40, BLN-AL40 608HW, 608HW BND-AL10, BND-AL10 BND-TL10, BND-TL10 BND-L21, BND-L21 BND-L24, BND-L24 BND-AL00, BND-AL00 BND-L31, BND-L31 BND-L34, BND-L34

Phone code	OS version	Qualification Reference	Models with Shared Qualification
			COL-AL10, COL-AL10 COL-AL00, COL-AL00 COL-TL10, COL-TL10 COL-TL00, COL-TL00 COL-L29, COL-L29 Smart Phone,Honor, COR-TL00 Smart Phone,Honor, COR-AL00 Smart Phone,Honor, COR-AL10 Smart Phone,Honor, COR-L29 Smart Phone, HUAWEI, PAR-AL00 Smart Phone, HUAWEI, PAR-TL00 Smart Phone, HUAWEI, PAR-LX1 Smart Phone, HUAWEI, PAR-LX9 Smart Phone, HUAWEI, PAR-LX1M Smart Phone, HUAWEI, PAR-TL20 Smart Phone, HUAWEI, INE-AL00 Smart Phone, HUAWEI, INE-TL00 Smart Phone, HUAWEI, SNE-AL00 Smart Phone, HUAWEI, INE-LX1 Smart Phone, HUAWEI, INE-LX2 Smart Phone, HUAWEI, SNE-LX1 Smart Phone, HUAWEI, SNE-LX2 Smart Phone, HUAWEI, SNE-LX3 Smart Phone, HUAWEI, JKM-LX1 Smart Phone, HUAWEI, JKM-LX2 Smart Phone, HUAWEI, JKM-LX3 Smart Phone, HUAWEI, JKM-TL00 Smart Phone, HUAWEI, JKM-AL00 Smart Phone, HUAWEI, JKM-AL00a Smart Phone, HUAWEI, JKM-AL00b Smart Phone, HONOR, JSN-AL00 Smart Phone, HONOR, JSN-AL00a Smart Phone, HONOR, JSN-TL00 Smart Phone, HONOR, JSN-L21 Smart Phone, HONOR, JSN-L22 Smart Phone, HONOR, JSN-L42

Phone code	OS version	Qualification Reference	Models with Shared Qualification
			LDN-L01, LDN-L01 LDN-L21, LDN-L21 LDN-LX2, LDN-LX2 LDN-LX3, LDN-LX3 LDN-TL10, LDN-TL10 LND-AL30, LND-AL30 LND-AL40, LND-AL40 LND-L29, LND-L29 LND-TL30, LND-TL30 LND-AL50, LND-AL50 LND-TL40, LND-TL40 LDN-AL10, LDN-AL10 LND-TL50, LND-TL50 LDN-AL00, LDN-AL00 LDN-AL20, LDN-AL20 LDN-TL00, LDN-TL00 LDN-TL20, LDN-TL20 AUM-AL20, AUM-AL20 AUM-AL00, AUM-AL00 AUM-TL00, AUM-TL00 AUM-TL20, AUM-TL20 ATU-AL10, ATU-AL10 ATU-TL10, ATU-TL10 ATU-L11, ATU-L11 ATU-L21, ATU-L21 ATU-L31, ATU-L31 ATU-L22, ATU-L22 ATU-L42, ATU-L42 ATU-LX3, ATU-LX3 AUM-L29, AUM-L29 AUM-L41, AUM-L41 AUM-L33, AUM-L33 Smart Phone, HONOR, BKK-AL10 Smart Phone, HONOR, BKK-AL00 Smart Phone, HONOR, BKK-TL00 Smart Phone, HONOR, BKK-L21 Smart Phone, HUAWEI, DUB-AL00 Smart Phone, HUAWEI, DUB-AL20 Smart Phone, HUAWEI, DUB-TL00 Smart Phone, HUAWEI, DUB-TL20 Smart Phone, HUAWEI, DUB-LX1 Smart Phone, HUAWEI, DUB-LX2 Smart Phone, HUAWEI, DUB-LX3 Smart Phone, HONOR, BKK-LX2 Smart Phone, HUAWEI, DUB-TL00a Smart Phone, HUAWEI, DUB-AL00a Smart Phone, HONOR, BKK-AL20 Smart Phone, HUAWEI, DUB-

Phone code	OS version	Qualification Reference	Models with Shared Qualification
LGE_LG-H818	Android_SDK:_23_(6.0)	66928 - End Product	LG-PFM LG-VS986 LG-F500L LG-F500S LG-F500K LGLS991 LG-US991 LG-H818 LG-PFM_Subset LG-H815P LG-H815AR LG-H815TR LG-H815L LG-H815K LG-H818N LG-H818P LG-H815 LG-VS986W LG-AS986 LG-AS991 LG-H819 LG-H815T LG-VS986B LG-VS986LD LG-VS986LE LG-H815PX
Xiaomi_Mi_10_Pro	Android_SDK:_29_(10)	146349 - End Product	Mi 10, M2001J2G Mi 10, M2001J2E Mi 10, M2001J2C Mi 10, M2001J2I Mi 10 Pro, M2001J1E Mi 10 Pro, M2001J1C Mi 10 Pro, M2001J1G Mi 10 Ultra, M2007J1SC
Nexus 5	Android_SDK:_23_(6.0.1)	Not Available to Silicon Labs	
OPPO_CPH1923	Android_SDK:_28_(9)	Not Available to Silicon Labs	
OPPO_CPH1912	Android_SDK:_27_(8.1.0)	128457 - End Product	OPPO Mobile Phone, CPH1920 AX5s, CPH1920 A5s, CPH1910 A5s, CPH1909 A5s, CPH1912 A7n, PCDT00 A7n, PCDM00 A9, PCAT10 A9, PCAM10 A9x, PCET00 A9x, PCEM00 F11, CPH1911 F11, CPH1913 F11, CPH1915 F11, CPH1916
OppO_CPH1905	Android_SDK:_27_(8.1.0)	119078 - End Product	OPPO Mobile Phone, CPH1903 A7, CPH1901 AX7 A7, CPH1903 A7, PBFT00 A7, PBFM00 A7, CPH1905
OPPO_CPH1987	Android_SDK:_28_(9)	Not Available to Silicon Labs	0

Phone code	OS version	Qualification Reference	Models with Shared Qualification
OPPO_CPH1917	Android_SDK:_29_(10)	128024 - End Product	OPPO Mobile Phone , CPH1917 Reno, PCAM00 Reno, CPH1917 Reno, PCAT00 K3, PCGM00 K3, CPH1955 K3, PCGT00
HUAWEI_ELS_NX9	Android_SDK:_29_(10)	138868 - Host Subsystem 137431 - Controller Subsystem 140076 - Profile Subsystem	<a href="https://launchstudio.bluetooth.com/ListingDetails/96444">https://launchstudio.bluetooth.com/ListingDetails/96444</a>
Xiaomi_Redmi_5_Plus	Android_SDK:_27_(8.1.0)	107188 - Controller Subsystem 86918 - Host Subsystem	Xiaomi Redmi 5 Plus, MEG7 Xiaomi Redmi 5 Plus, MEE7 Xiaomi Redmi 5 Plus, MET7
Xiaomi_Redmi_6_Pro	Android_SDK:_27_(8.1.0)	112808 - End Product	Redmi Note 5, M1803E7SG Redmi Note 5, M1803E7SH Redmi Note 6 Pro, M1806E7TH Redmi Note 6 Pro, M1806E7TG
Xiaomi_Redmi_7	Android_SDK:_28_(9)	127108 - End Product	Xiaomi Redmi 7, M1810F6LG Xiaomi Redmi 7, M1810F6LH Xiaomi Redmi 7, M1810F6G
Xiaomi_Redmi_K20_Pro_Premium_Edition	Android_SDK:_29_(10)	134727 - Controller Subsystem 114535 - Host Subsystem	MI 9T Pro, M1903F11G
Xiaomi_Redmi_K30_Pro	Android_SDK:_29_(10)	147004 - End Product	POCO F2 Pro, M2004J11G Redmi K30 Pro 5G, M2001J11E Redmi K30 Pro 5G/Redmi K30 Pro 5G Zoom Edition, M2001J11I Redmi K30 Pro 5G, M2001J11C
Xiaomi_Redmi_Note_8	Android_SDK:_28_(9)	137555 - End Product	Redmi Note8, M1908C3JG Redmi Note8, M1908C3JH
Xiaomi_Redmi_Note_5	Android_SDK:_28_(9)	112808 - End Product	Redmi Note 5, M1803E7SG Redmi Note 5, M1803E7SH Redmi Note 6 Pro, M1806E7TH Redmi Note 6 Pro, M1806E7TG
Samsung_SM-G988B	Android_SDK:_29_(10)	158725 - End Product 156360 - Profile Subsystem 156361 - Profile Subsystem 156364 - Profile Subsystem 156367 - Profile Subsystem 156366 - Profile Subsystem 156362 - Profile Subsystem 156363 - Profile Subsystem	Galaxy S20 Ultra 5G, SM-G988B_DS
Samsung_SM-A105G	Android_SDK:_29_(10)	126589 - Host Subsystem 100088 - Controller Subsystem 124964 - Profile Subsystem	Galaxy A10, SM-A105F Galaxy A10, SM-A105F_DS Galaxy A10, SM-A105M_DS Galaxy A10, SM-A105G_DS Galaxy A10, SM-A105G Galaxy A10, SM-A105M Galaxy A10, SM-A105N Galaxy A10, SM-A105FN_DS

Phone code	OS version	Qualification Reference	Models with Shared Qualification
Samsung_SM-A107F	Android_SDK:_28_(9)	135247 - End Product	Galaxy A10s, SM-A107F_DS Galaxy A10s, SM-A107M_DS Galaxy A10s, SM-A107F Galaxy A10s, SM-A107M Galaxy M01s, SM-M017F_DS
Samsung_SM-A305F	Android_SDK:_28_(9)	123890 - Host Subsystem 100088 - Controller Subsystem 124964 - Profile Subsystem	Galaxy-A30, SM-A305F Galaxy-A30, SM-A305G Galaxy-A30, SM-A305GN Galaxy-A30, SM-A305N Galaxy-A30, SM-A305F_DS Galaxy-A30, SM-A305FN_DS Galaxy-A30, SM-A305GN_DS Galaxy-A30, SM-A305GT_DS Galaxy-A30, SM-A305G_DS Galaxy-A30, SM-A305FN Galaxy-A30, SM-A305YN
Samsung_SM-A505F	Android_SDK:_28_(9)	123895 - End Product 124964 - Profile Subsystem	Galaxy-A50 , SM-A505FN Galaxy-A50, SM-A505GT_DS Galaxy-A50, SM-A505GN_DS Galaxy-A50, SM-A505G_DS Galaxy-A50, SM-A505FN_DS Galaxy-A50, SM-A505FM_DS Galaxy-A50, SM-A505F_DS Galaxy-A50, SM-A505G Galaxy-A50, SM-A505X Galaxy-A50, SM-A505GN Galaxy-A50, SM-A505F Galaxy-A50, SM-A505U Galaxy-A50, SM-A505FN Galaxy-A50, SM-A505YN Galaxy-A50, SM-A505W Galaxy-A50, SM-A505N Galaxy-A50, SM-S506DL Galaxy-A50, SM-A505U1
SM-A515F	Android_SDK:_29_(10)	141913 - End Product 141230 - Profile Subsystem 141221 - Profile Subsystem 124964 - Profile Subsystem 141223 - Profile Subsystem 141224 - Profile Subsystem 141225 - Profile Subsystem 141226 - Profile Subsystem 141234 - Profile Subsystem 141232 - Profile Subsystem 141233 - Profile Subsystem	Galaxy-A51, SM-A515F_N Galaxy-A51, SM-A515F Galaxy-A51, SM-A515F_DS Galaxy-A51, SM-A515F_DSM Galaxy-A51, SM-A515F_DSN Galaxy-A51, SM-A515F_DST Galaxy-A51, SM-A515X



Phone code	OS version	Qualification Reference	Models with Shared Qualification
Samsung_SM-A605G	Android_SDK:_26_(8.0.0)	110962 - End Product	Galaxy-A6-Plus , SM-A605FN Galaxy-A6-Plus , SM-A605FN_DS Galaxy-A6-Plus, SM-A605F_DS Galaxy-A6-Plus, SM-A605G_DS Galaxy-A6-Plus, SM-A605GN_DS Galaxy-A6-Plus, SM-A6050 Galaxy-A6-Plus, SM-A6058 Galaxy-A6-Plus, SM-A605G Galaxy-A6-Plus, SM-A605F Galaxy-A6-Plus, SM-A605GN Galaxy-A6-Plus, SM-A605X Galaxy-A6-Plus, SM-A605XC Galaxy-A6-Plus, SM-A605FN Galaxy-A6-Plus , SM-A605K
Samsung_SM-A750GN	Android_SDK:_26_(8.0.0)	117674 - Host Subsystem 100088 - Controller Subsystem	Galaxy A7 2018, SM-A750FN Galaxy A7 2018, SM-A750N Galaxy-A7-2018, SM-A750F_DS Galaxy-A7-2018, SM-A750FN_DS Galaxy-A7-2018, SM-A750G_DS Galaxy-A7-2018, SM-A750GN_DS Galaxy-A7-2018, SM-A750GN Galaxy-A7-2018, SM-A750G Galaxy-A7-2018, SM-A750F Galaxy-A7-2018, SM-A750X
Samsung_SM-A705F	Android_SDK:_28_(9)	126131 - End Product 124964 - Profile Subsystem	Galaxy-A70 , SM-A705FN Galaxy-A70, SM-A705GM Galaxy-A70, SM-A705FN_DSM Galaxy-A70, SM-A705X Galaxy-A70, SM-A7050 Galaxy-A70, SM-A705FN_DS Galaxy-A70, SM-A705XC Galaxy-A70, SM-A705W Galaxy-A70, SM-A705MN Galaxy-A70, SM-A705F Galaxy-A70, SM-A705F_DS Galaxy-A70, SM-A705MN_DS Galaxy-A70, SM-A705GM_DS Galaxy-A70, SM-A705YN
Samsung_SM-A805F	Android_SDK:_28_(9)	129305 - End Product 124964 - Profile Subsystem	Samsung Mobile Phone, SM-A805F Galaxy A80, SM-A805F_DS Galaxy A80, SM-A805F Galaxy A80, SM-A805F_DSM Galaxy A80, SM-A805N Galaxy A80, SM-A805X Galaxy A80, SM-A805XC Galaxy A80, SM-A8050
Samsung_SM-A920F	Android_SDK:_29_(10)	124417 - End Product 124964 - Profile Subsystem	Galaxy A9 2018, SM-A920F Galaxy A9 2018, SM-A920N Galaxy A9 2018, SM-A920F_DS

Phone code	OS version	Qualification Reference	Models with Shared Qualification
Samsung_SM-J510FN	Android_SDK:_25_(7.1.1)	100952 - End Product	SM-J510FN, SM-J510FN SM-J510H_DS, SM-J510H_DS Galaxy-J5, SM-J510H_DS Galaxy-J5, SM-J510FN
Samsung_SM-J710F	Android_SDK:_23_(6.0.1)	100611 - End Product	SM-J710FN, SM-J710FN SM-J710MN, SM-J710MN SM-J710F_DS, SM-J710F_DS SM-J710F, SM-J710F SM-J710FQ, SM-J710FQ SM-J710FN_DS, SM- J710FN_DS SM-J710GN, SM-J710GN SM-J710K, SM-J710K
Samsung_SM-M205G	Android_SDK:_28_(9)	121921 - Host Subsystem 100088 - Controller Subsystem	Galaxy-M20, SM-M205F Galaxy-M20, SM-M205F_DS Galaxy-M20, SM-M205FN_DS Galaxy-M20, SM-M205G_DS Galaxy-M20, SM-M205M_DS Galaxy-M20, SM-M205M
Samsung_SM-N950F	Android_SDK:_28_(9)	124394 - End Product 124964 - Profile Subsystem	Galaxy Note 8, SM-N950F
Samsung_SM-N960F	Android_SDK:_29_(10)	123909 - Profile Subsystem 116457 - End Product	Samsung Mobile Phone , SM- N960F
Samsung_SM-G975F	Android_SDK:_29_(10)	121766 - End Product	Samsung Mobile Phone , SM- G405F_DS Samsung Mobile Phone, SM- G405X Samsung Mobile Phone, SM- G405F Samsung Mobile Phone, SM- G405XN Samsung Mobile Phone, SM- G405N Galaxy S10+, SM-G975X Galaxy S10+, SM-G975F_DS Galaxy S10+, SM-G975F Galaxy S10+, SM-G975XN Galaxy S10+, SM-G975N
SM-G970F	Android_SDK:_29_(10)	122960 - End Product	Samsung Mobile Phone, SM- G400F Samsung Mobile Phone, SM- G400N Samsung Mobile Phone, SM- G400XN Samsung Mobile Phone, SM- G400X Samsung Mobile Phone, SM- G400F_DS Galaxy S10e, SM-G970N Galaxy S10e, SM-G970F Galaxy S10e, SM-G970XN Galaxy S10e, SM-G970X Galaxy S10e, SM-G970F_DS

Phone code	OS version	Qualification Reference	Models with Shared Qualification
Samsung_SM-G930F	Android_SDK:_26_(8.0.0)	110193 - End Product	Samsung Galaxy S7, SM-G930F Samsung Galaxy S7, SM-G930L Samsung Galaxy S7, SM-G930S Samsung Galaxy S7, SM-G930K Samsung Galaxy S7, SM-G930W8
Samsung_SM-G935F	Android_SDK:_26_(8.0.0)	110511 - End Product	Galaxy S7 Edge, SM-G935F Galaxy S7 Edge, SM-G935K Galaxy S7 Edge, SM-G935L Galaxy S7 Edge, SM-G935S Galaxy S7 Edge, SM-G935W8
Samsung_SM-G950F	Android_SDK:_26_(8.0.0)	123982 - End Product	Galaxy S8, SM-G950F
Samsung_SM-G955F	Android_SDK:_26_(8.0.0)	124224 - End Product	Galaxy S8+, SM-G955F
LGE_VS995	Android_SDK:_24_(7.0)	85177 - End Product	LG-VS995, LG-VS995 LG-H910, LG-H910 LG-LS997, LG-LS997 LG-H990T, LG-H990T LG-H910PR, LG-H910PR LG-H915, LG-H915 LG-US996, LG-US996 LG-H918, LG-H918 LG-VS995S, LG-VS995S LG V20, LG-H910
LGE_LG-H931	Android_SDK:_28_(9)	96522 - End Product	LG-VS996, LG-VS996 LG-AS998, LG-AS998 LG-US998, LG-US998 LG-H931, LG-H931 LG-LS998, LG-LS998 LG-H933, LG-H933 LGM-V300L, LGM-V300L LGM-V300S, LGM-V300S LGM-V300K, LGM-V300K LG-H930, LG-H930 LG-H930DS, LG-H930DS LG-H930K, LG-H930K LG-H930G, LG-H930G LG-H932, LG-H932 LG-H932PR, LG-H932PR LG-H930D, LG-H930D LG V30, LG-H931
Xiaomi_MI_9	Android_SDK:_28_(9)	123912 - End Product	XiaoMi MI 9, M1902F1G
Xiaomi_Mi_9T	Android_SDK:_29_(10)	130653 - Controller Subsystem 114535 - Host Subsystem	MI 9T, M1903F10G
Xiaomi_Mi_A2_Lite	Android_SDK:_27_(8.1.0)	116717 - End Product	Xiaomi MI A2 LITE, M1805D1SG
Xiaomi_MI_6	Android_SDK:_28_(9)	98293 - End Product	Xiaomi Mi 6, MCE16 Xiaomi Mi 6, MCT1 Xiaomi MIX 2, MDE5 Xiaomi MIX 2, MDT5 Xiaomi Note 3, MCE8 Xiaomi Note 3, MCT8

Phone code	OS version	Qualification Reference	Models with Shared Qualification
Xiaomi_MI_6X	Android_SDK:_27_(8.1.0)	116110 - End Product	Xiaomi MI A2, M1804D2SG
Xiaomi_MI_8	Android_SDK:_28_(9)	115812 - End Product	MI MIX2S, M1803D5XA MI 8, M1803E1A POCOPHONE F1, M1805E10A
Xiaomi_Mi9_Pro_5G	Android_SDK:_28_(9)	146631 - End Product	Redmi Note 9S, M2003J6A1G Redmi Note 9S, M2003J6A1R Redmi Note 9 Pro, M2003J6A1I Redmi Note 9 Pro Max, M2003J6B1I Redmi Note 9 Pro, M2003J6B2G POCO M2 Pro, M2003J6CI
Xiaomi_MI_9_SE	Android_SDK:_28_(9)	127288 - Controller Subsystem 114535 - Host Sybsystem	MI 9 SE, M1903F2G
Xiaomi_MI_MAX_3	Android_SDK:_27_(8.1.0)	116759 - End Product	MI MAX3, M1804E4A MI 8 Lite, M1808D2TG
Xiaomi_MI_8_Lite	Android_SDK:_27_(8.1.0)	116759 - End Product	MI MAX3, M1804E4A MI 8 Lite, M1808D2TG
Xiaomi_Mi_A2	Android_SDK:_28_(9)	116110 - End Product	Xiaomi MI A2, M1804D2SG
Xiaomi_Mi_A3	Android_SDK:_29_(10)	136133 - End Product	Xiaomi Mi A3, M1906F9SH
Xiaomi_Mi_MIX_3_5G	Android_SDK:_28_(9)	121613 - End Product	Xiaomi MIX3, M1810E5A
Xiaomi_MIX_2S	Android_SDK:_28_(9)	115812 - End Product	MI MIX2S, M1803D5XA MI 8, M1803E1A POCOPHONE F1, M1805E10A
Xiaomi_Redmi_7A	Android_SDK:_28_(9)	134589 - End Product	Xiaomi Redmi 7A, M1903C3EG Xiaomi Redmi 7A, M1903C3EH
Redmi Note 7	Android_SDK:_29_(10)	123919 - End Product	Redmi Note7, M1901F7G Redmi Note7, M1901F7H
iPhone 8 Plus	iOS 14.2	99179 - Host Subsystem 96809 - Controller Subsystem 62504 - Profile Subsystem	iPhone 8, A1863 Apple TV 4K, A1842 iPhone 8, A1905 iPhone 8, A1906 iPhone 8 Plus, A1864 iPhone X, A1865 iPhone 8 Plus, A1897 iPhone X, A1901 iPhone 8 Plus, A1898 iPhone X, A1902 iPhone 8, A1907 iPhone 8 Plus, A1899 iPhone X, A1903 HomePod, A1639
iPhone 5S	iOS 12.4.8	Not Available to Silicon Labs	0
iPhone 6	iOS 12.4.8	48083 - Profile Subsystem 59997 - Controller Subsystem 53915 - Host Subsystem	A1586, A1549, A1589

Phone code	OS version	Qualification Reference	Models with Shared Qualification
iPhone X	iOS 13.6.1	99179 - Host Subsystem 96809 - Controller Subsystem 62504 - Profile Subsystem	iPhone 8, A1863 Apple TV 4K, A1842 iPhone 8, A1905 iPhone 8, A1906 iPhone 8 Plus, A1864 iPhone X, A1865 iPhone 8 Plus, A1897 iPhone X, A1901 iPhone 8 Plus, A1898 iPhone X, A1902 iPhone 8, A1907 iPhone 8 Plus, A1899 iPhone X, A1903 HomePod, A1639
iPhone 7 Plus	iOS 14.2	64104 - Host Subsystem 62504 - Profile Subsystem 86656 - Controller Subsystem	iPhone 7 Plus, A1661 iPhone 7 Plus, A1785 iPhone 7 Plus, A1786 iPhone 7 Plus, A1784
iPhone Xs	iOS 13.5.1	115456 - Controller Subsystem 102170 - Profile Subsystem 99179 - Host Subsystem	iPhone, A1921 A2101 A2102 A2104 A2103 iPhone XR, A1984 A2105 A2106 A2108 A2107 iPhone Xs, A1920 A2097 A2098 A2100 A2099 iPhone Xs Max, A1921 A2101 A2102 A2104 A2103 iPad Pro 11", A1980 A2013 A1934 A1979 iPad Pro 12.9", A1876 A2014 A1895 A1893 iPad mini, A2133 A2126 A2124 A2125 iPad, A2152 A2153 A2123 A2154 iPad mini 5, A2133 A2126 A2124 A2125 iPad Air (3rd generation), A2152 A2153 A2123 A2154
iPhone 8	iOS 13.5.1	99179 - Host Subsystem 96809 - Controller Subsystem 62504 - Profile Subsystem	iPhone 8, A1863 Apple TV 4K, A1842 iPhone 8, A1905 iPhone 8, A1906 iPhone 8 Plus, A1864 iPhone X, A1865 iPhone 8 Plus, A1897 iPhone X, A1901 iPhone 8 Plus, A1898 iPhone X, A1902 iPhone 8, A1907 iPhone 8 Plus, A1899 iPhone X, A1903 HomePod, A1639
iPhone 6 Plus	iOS 12.4.8	Not Available to Silicon Labs	
iPhone 7	iOS 13.7	64104 - Host Subsystem 62504 - Profile Subsystem 86655 - Controller Subsystem	iPhone 7, A1660 iPhone 7, A1779 iPhone 7, A1780 iPhone 7, A1778

Phone code	OS version	Qualification Reference	Models with Shared Qualification
iPhone 6S	iOS 13.7	Not Available to Silicon Labs	
iPhone SE (2nd generation)	iOS 13.5.1	Not Available to Silicon Labs	
iPhone 11 Pro	iOS 14.2	136497 - Controller Subsystem 137333 - Profile Subsystem 137332 - Host Subsystem	iPhone 11 Pro, A2160 iPhone 11 Pro Max, A2161 iPhone 11 Pro, A2217 iPhone 11 Pro, A2215 iPhone 11 Pro, A2216 iPhone 11 Pro Max, A2218 iPhone 11 Pro Max, A2220 iPhone 11 Pro Max, A2219 iPhone 11, A2111 iPhone 11, A2221 iPhone 11, A2223 iPhone 11, A2222 iPad Pro 12.9-inch, A2232 iPad Pro 12.9-inch, A2069 iPad Pro 12.9-inch, A2233 iPad Pro 12.9-inch, A2229 iPad Pro 11-inch, A2068 iPad Pro 11-inch, A2230 iPad Pro 11-inch, A2231 iPad Pro 11-inch, A2228
iPad mini (5th generation)	iOS 13.4.1	115456 - Controller Subsystem 102170 - Profile Subsystem 99179 - Host Subsystem	iPhone, A1921 A2101 A2102 A2104 A2103 iPhone XR, A1984 A2105 A2106 A2108 A2107 iPhone Xs, A1920 A2097 A2098 A2100 A2099 iPhone Xs Max, A1921 A2101 A2102 A2104 A2103 iPad Pro 11", A1980 A2013 A1934 A1979 iPad Pro 12.9", A1876 A2014 A1895 A1893 iPad mini, A2133 A2126 A2124 A2125 iPad, A2152 A2153 A2123 A2154 iPad mini 5, A2133 A2126 A2124 A2125 iPad Air (3rd generation), A2152 A2153 A2123 A2154
iPad (7th generation)	iOS 13.4.1	Not Available to Silicon Labs	
iPad Air(3rd generation)	iOS 13.3.1	Not Available to Silicon Labs	

Phone code	OS version	Qualification Reference	Models with Shared Qualification
iPAD 11 Pro	iOS 13.5.1	137333 (Profile Subsystem) 137332 (Host Subsystem)	iPhone 11 Pro, A2160 iPhone 11 Pro Max, A2161 iPhone 11 Pro, A2217 iPhone 11 Pro, A2215 iPhone 11 Pro, A2216 iPhone 11 Pro Max, A2218 iPhone 11 Pro Max, A2220 iPhone 11 Pro Max, A2219 iPhone 11, A2111 iPhone 11, A2221 iPhone 11, A2223 iPhone 11, A2222 iPad Pro 12.9-inch, A2232 iPad Pro 12.9-inch, A2069 iPad Pro 12.9-inch, A2233 iPad Pro 12.9-inch, A2229 iPad Pro 11-inch, A2068 iPad Pro 11-inch, A2230 iPad Pro 11-inch, A2231 iPad Pro 11-inch, A2228
iPhone XS Max	iOS 12.3	115456 - Controller Subsystem 102170 - Profile Subsystem 99179 - Host Subsystem	iPhone, A1921 A2101 A2102 A2104 A2103 iPhone XR, A1984 A2105 A2106 A2108 A2107 iPhone Xs, A1920 A2097 A2098 A2100 A2099 iPhone Xs Max, A1921 A2101 A2102 A2104 A2103 iPad Pro 11", A1980 A2013 A1934 A1979 iPad Pro 12.9", A1876 A2014 A1895 A1893 iPad mini, A2133 A2126 A2124 A2125 iPad, A2152 A2153 A2123 A2154 iPad mini 5, A2133 A2126 A2124 A2125 iPad Air (3rd generation), A2152 A2153 A2123 A2154

## 5. References

- <https://www.bluetooth.com/develop-with-bluetooth/qualification-listing/>

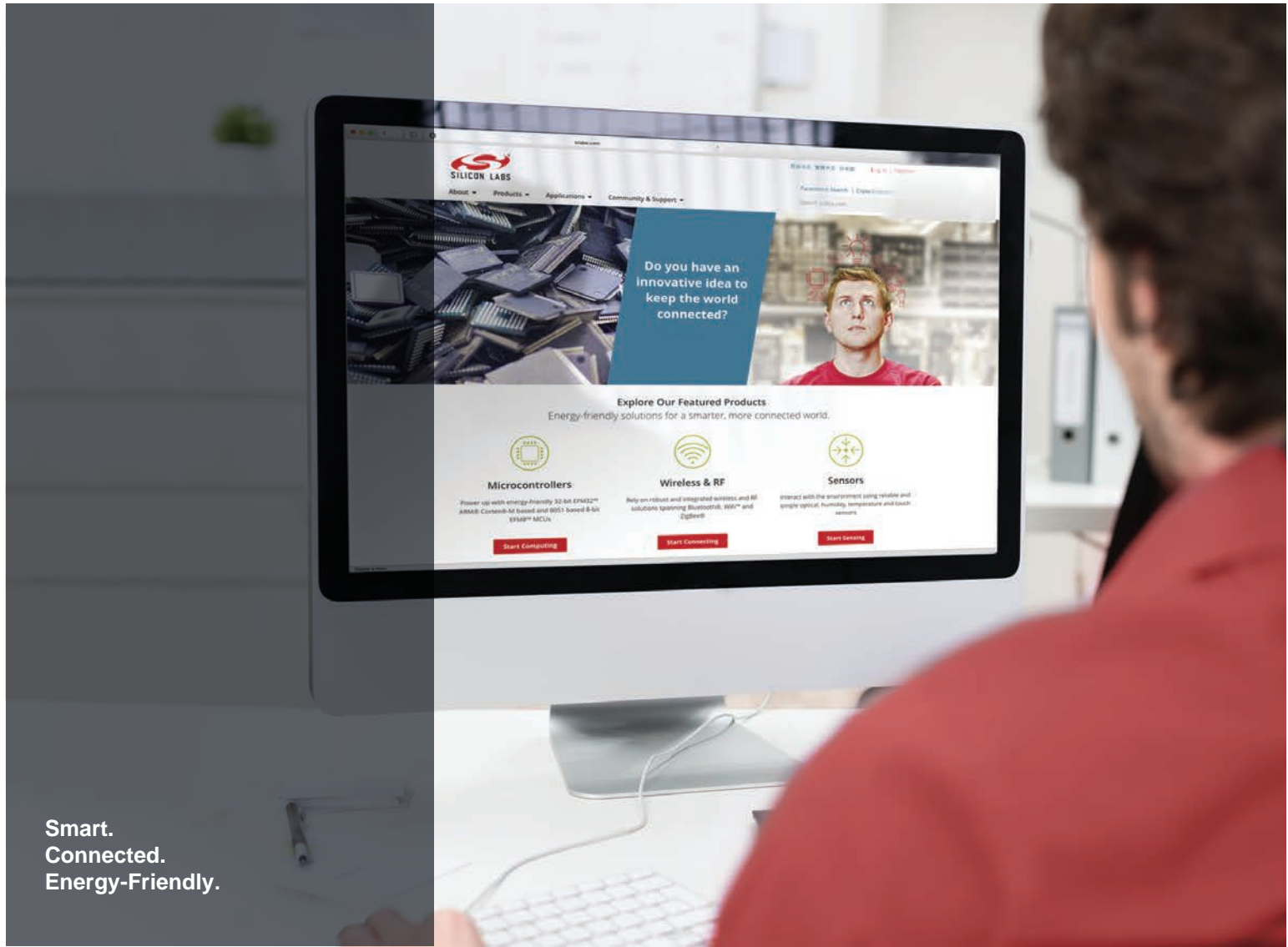


## 6. Revision History

### Revision 0.1

January, 2021

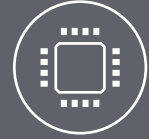
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