Assembly and Maintenance Manual

for Telink BLE 1x1 Test System 2.1

AN-16052600-E2

Ver. 1.1.0

2023/06/20

Keyword

Assembly, Maintenance

Brief

This document is the assembly and maintenance guide for Telink BLE 1x1 Test System 2.1.

Published by

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Information

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Revision History

Version	Change Description
V1.0.0	Initial release.
V1.1.0	Removed section 3 and section 4

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1. Overall Architecture of 1x1 Test System 2.1

Telink BLE 1x1 Test System 2.1 consists of test bench and mechanical structure. The test bench includes hardware platform and firmware folder, and it's provided by Telink; while customer needs to make the mechanical structure suitable for DUT (Device Under Test), and connect cables according to the guide in this document.

A set of 1x1 Test Bench mainly contains the following hardware resources.

1) An EVK daughter board provided by Telink. The EVK board should be burned with the EVK firmware for test bench.

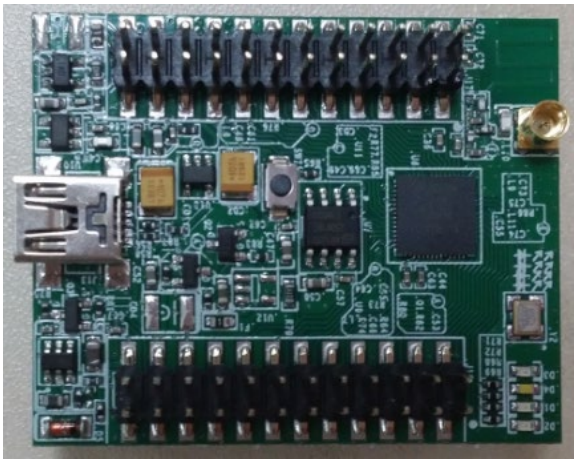

Figure 1-1 EVK daughter board

2) A PCB Antenna board and a RF cable provided by Telink, as shown below.

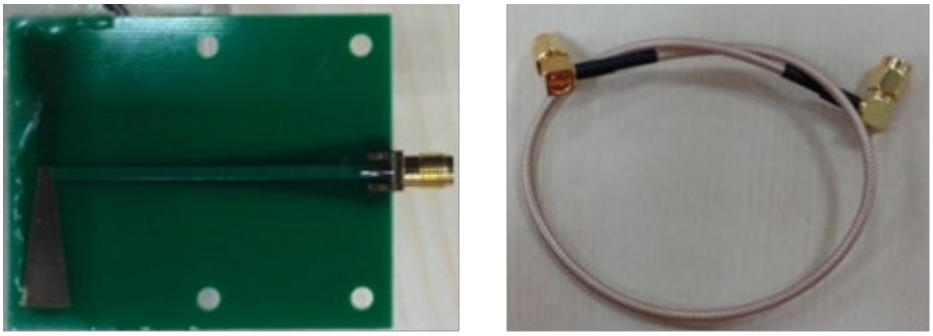

Figure 1-2 PCB antenna board and RF cable

3) A digital buzzer module (Dimension: 32.5x13mm): The buzzer is connected to corresponding GPIOs of the EVK daughter board via Dupont cables. The buzzer module is used for Amic test.

Figure 1-3 Buzzer module

4) A PC. On PC side, the EvkMonitor tool can be used to burn firmware for EVK daughter board, and user can also observe test result via the EvkMonitor.

   Figure below shows the system connection chart.

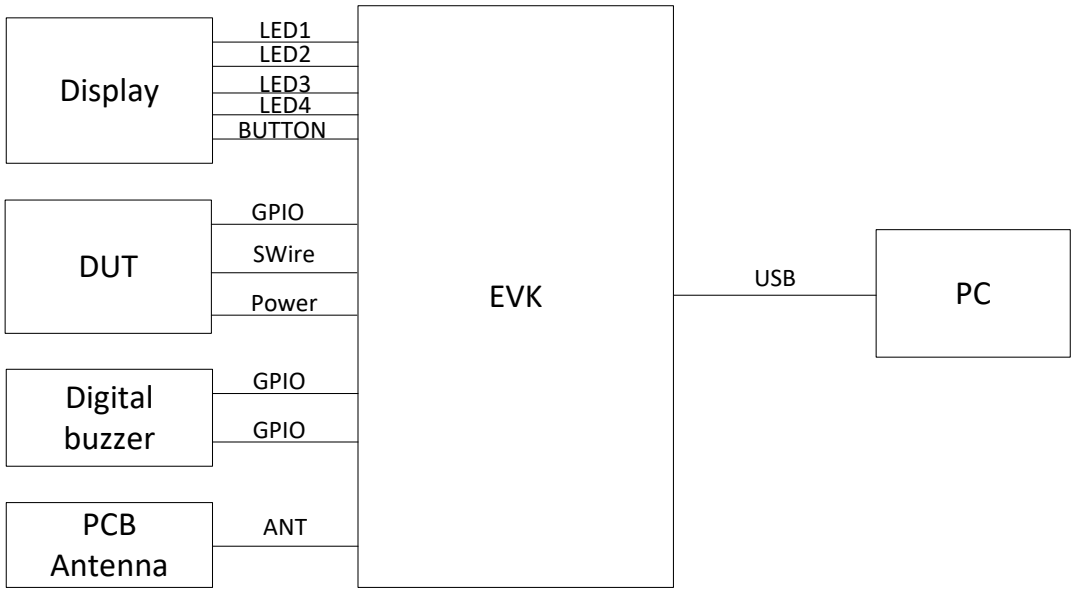

Figure 1-4 System connection chart

2. Hardware Platform Building

2.1 Check External Antenna

Telink test bench adopts external antenna for RF test. Customer needs to check the antenna consistency of various jigs. Figure 2-1 shows the PCB antenna supplied by Telink.

Figure 2-1 Telink PCB antenna board

Figure 2-2 shows dimensions in mm of the PC antenna supplied by Telink.

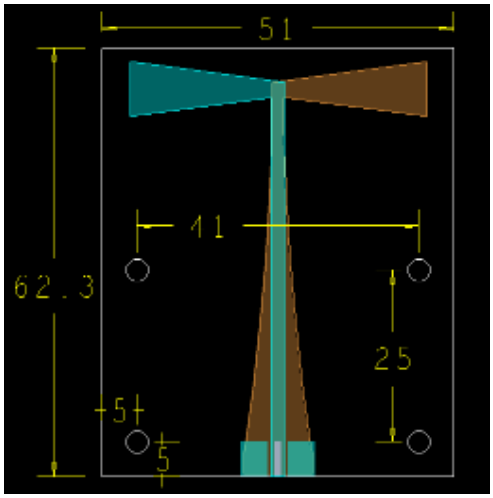

Figure 2-2 Telink PCB antenna dimensions

2.2 Cable Connection

2.2.1 Connection Points on EVK Daughter Board

Figure 2-3 marks connection points on EVK daughter board to be connected with DUT, PCB antenna and mechanical structure in any application.

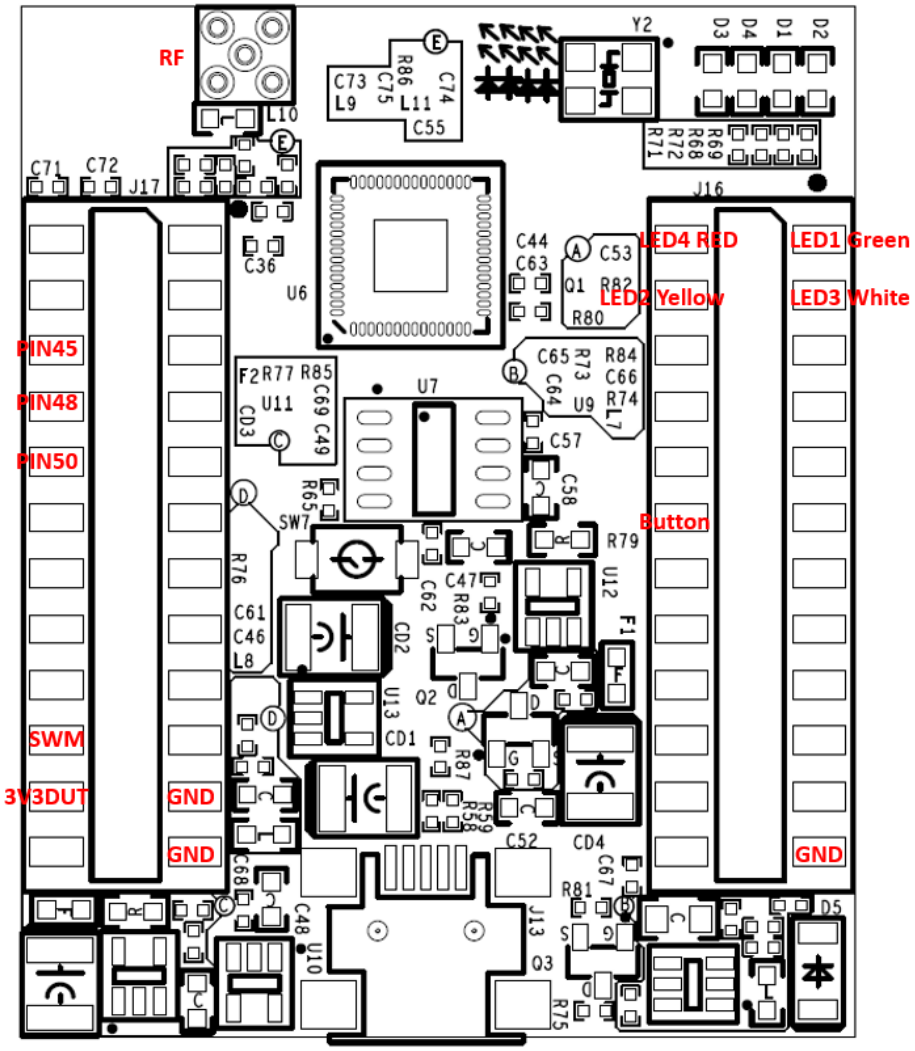

Figure 2-3 Connection points on EVK daughter board

2.2.2 Cable Connection Between EVK Daughter Board and PCB Antenna

The connection point "RF" on EVK daughter board should be connected with PCB antenna board via an RF cable.

2.2.3 Cable Connection Between EVK Daughter Board and Buzzer

Table 2-1 shows the connection correspondence between EVK daughter board and buzzer board.

Table 2-1 Cable connection between EVK and buzzer

Connection points on EVK daughter board	Connection points on buzzer board
PIN48	VCC (POWER)
PIN50	I/O (OUT)
GND	GND

2.2.4 Cable Connection Between EVK Daughter Board and Mechanical Structure

Table 2-2 shows the connection correspondence between EVK daughter board and Mechanical structure.

Table 2-2 Cable connection between EVK and mechanical structure

Connection points on EVK daughter board	Connection points on Mechanical structure
LED1 Green	Green LED+
LED2 Yellow	Yellow LED+
LED3 White	White LED+
LED4 RED	Red LED+
Button	Button+
GND	Green LED-, Yellow LED-, White LED-, Red LED-, Button-

2.2.5 Cable Connection Between EVK Daughter Board and DUT

Table 2-3 shows the connection correspondence between EVK daughter board and DUT.

Table 2-3 Cable connection between EVK and DUT

Connection points on EVK daughter board	Connection points on DUT
3V3DUT	BAT+
GND	BAT-
SWM	SWS (DUT)

If the DUT is a remote control board, it's also needed to connect wakeup pin of the DUT with PIN45 of the EVK board.

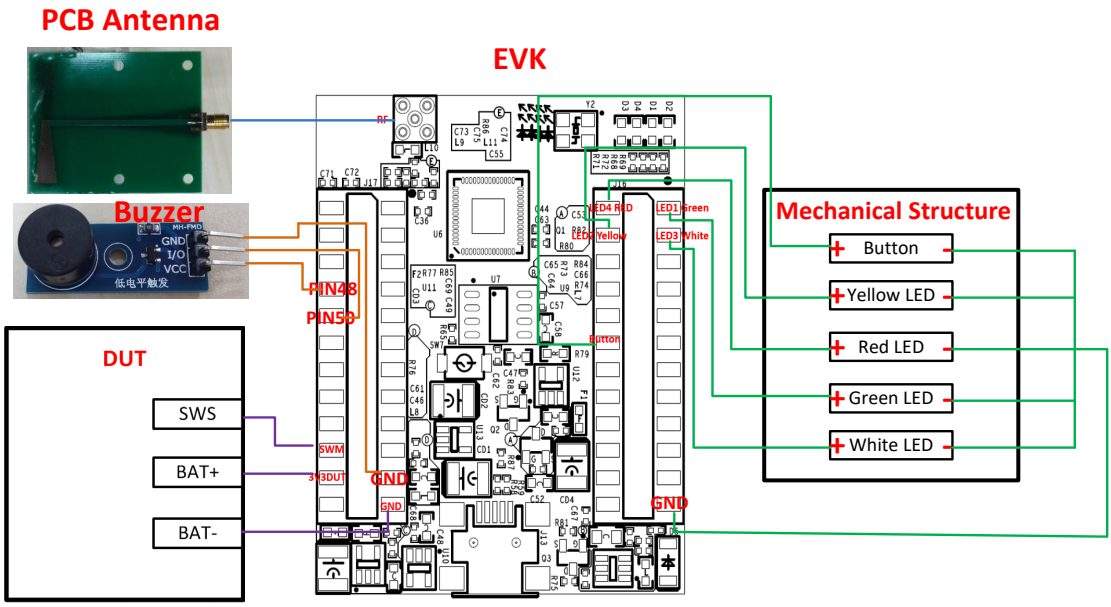

Figure 2-4 Cable connection chart

2.2.6 Other Cable Connection

EVK daughter board should be connected with PC via an USB cable. User can burn firmware for the EVK daughter board and observe test result via the EvkMonitor tool on PC side.

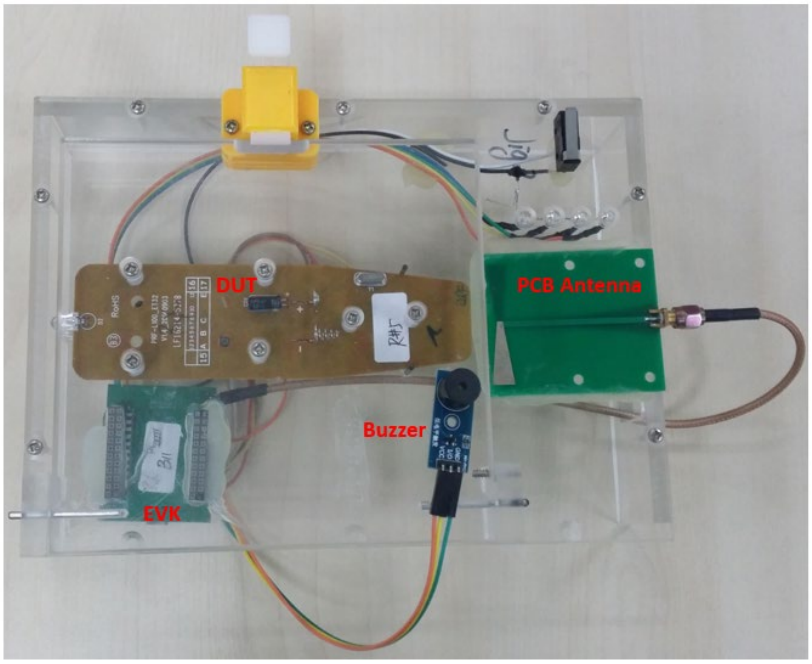

Figure 2-5 BLE 1x1 test system 2.1

3. Appendix

3.1 Appendix 1：Hardware List

Table 3-1 Hardware list

Type	Number	Spec
BLE EVK daughter board	1	C1T42A20_V3.3
External antenna board	1	ANT_01
Buzzer board	1	Active buzzer module
Long RF cable	1	-
Dupont cable	Several	-
Mini USB cable	1	-
Carton	1	-

3.2 Appendix 2: Dimension Chart of EVK Daughter Board

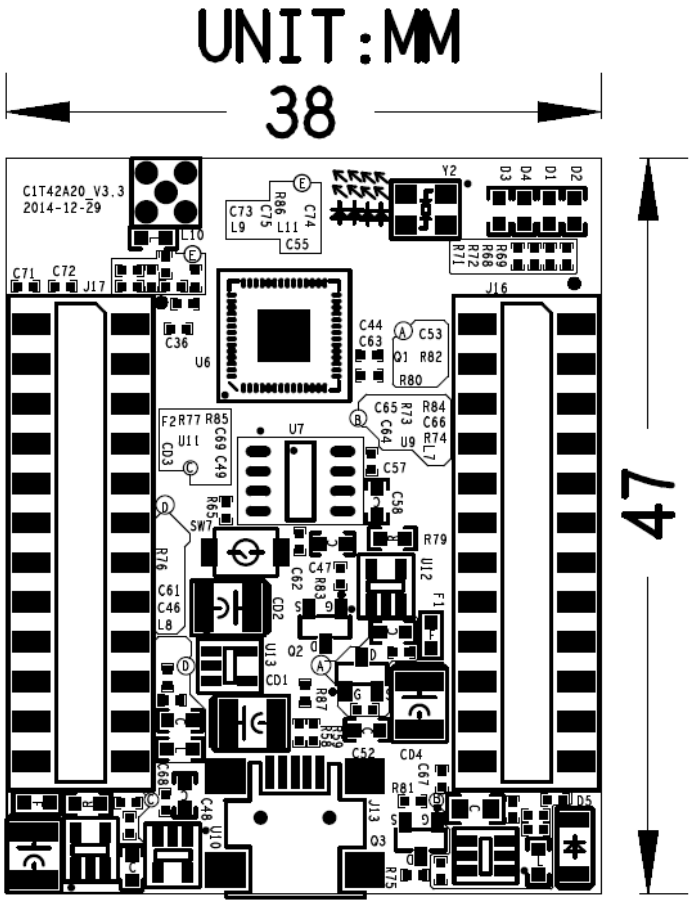

Figure 3-1 Dimension chart of EVK daughter board