



Test pan

The smart baby cradle is to help parents to monitoring the baby and comfort the baby. All features relate to each other. In order to test the system performance, some integrated test have to be done. For some component, such as motor, the functionalities need to be tested as well.

1.1 Integrated test

In order to test the system performance, the following conditions have to be made and considered:

1. All the electronic components need to be connected to the microcontroller
2. The power for the microcontroller, the motor and the mobile toy need to be supplied properly
3. All signals can be detected by the microcontroller and be received by the phone

The overall performance test can be done by following steps:

1. Power the microcontroller, the motor and the mobile toy
2. Simulate the baby crying sound to the mic
3. Check if the phone application sends a notification
4. Select webcam feature in the phone and check if the phone can display the real time video from webcam
5. Turn off the webcam
6. Turn on the motor by the phone and check if the cradle starts to rock smoothly
7. Turn off or stop rocking the cradle
8. Turn on the speaker and check if the music melody is played through the speaker
9. Turn off the speaker of stop playing the music
10. Turn on the mobile toy by the phone and check if the toy starts to work
11. Turn off the mobile toy
12. Repeat steps 4-11 to check if the system can work properly steadily and stably

1.2 Motor test

Test case 1

Preconditions:

1. All the electronic components need to be connected to the microcontroller
2. The power for the microcontroller, the motor and the mobile toy need to be supplied properly
3. All signals can be detected by the microcontroller and be received by the phone 4. Put weight in the cradle

Input:



Turn on the motor and rock the cradle for 10 minutes.

Expected result:

The motor keeps rocking the cradle with fixed speed and swing angle

Test case 2

Preconditions:

1. All the electronic components need to be connected to the microcontroller
2. The power for the microcontroller, the motor and the mobile toy need to be supplied properly
3. All signals can be detected by the microcontroller and be received by the phone
4. Put weight in the cradle
5. The motor is rocking the cradle smoothly

Input:

Turn off the power of the motor or turn off the power of the microcontroller

Expected result:

The cradle will be set to the original horizontal position

1.3 Webcam test

Test case 1

Preconditions:

1. All the electronic components need to be connected to the microcontroller
2. The power for the microcontroller, the motor and the mobile toy need to be supplied properly
3. All signals can be detected by the microcontroller and be received by the phone
4. Put moving object in front of the webcam

Input:

Select the lowest resolution option (320X240)

Expected result:

The phone can clearly display the object

Test case 2

Preconditions:



1. All the electronic components need to be connected to the microcontroller
2. The power for the microcontroller, the motor and the mobile toy need to be supplied properly
3. All signals can be detected by the microcontroller and be received by the phone 4. Put moving object in front of the webcam

Input:

Select the highest resolution option (1600X1200)

Expected result:

The phone can clearly show the movement of the object