**Chapter 4: Testing**

We have tested the three modules separately.

**Section 1: Wi-Fi Detection Testing**

For verification, the Wi-Fi detection module result is compared with the result from Wi-Fi Analyzer developed by farproc. It has been used by 3 hundred thousand google play users. The detection location is the library of HKUST. Both the applications are run on the LG Nexus 5.

As shown in Figure () and Figure (), difference between the detection from our application and Wi-Fi Analyzer are within a reasonable range. Our application’s Wi-Fi detection modules are running correctly.

|  |  |
| --- | --- |
|  |  |
| Figure () Wi-Fi Detections Results from Our Application | Figure () Wi-Fi Detections Results from Wi-Fi  Analyzer |

**Section 2: LTE Detection Testing**

The LTE detection from our application is compared with the LTE Discovery mobile application developed by Danial Goodwin. It has gained six thousand downloads from Google Plat Store. The detection location is the library of HKUST. Both the applications are run on the LG Nexus 5.

LTE Discovery does not keep the record of the last detection. Comparing the LTE channels detected by our application and LTE Discovery, as shown in Figure () and Figure (), the results are exactly the same. Our application’s LTE detection modules are running correctly.

|  |  |
| --- | --- |
|  |  |
| Figure () LTE Detection from Our Application | Figure () LTE Detection from LTE Discovery |

**Section 2: Localization Result**