

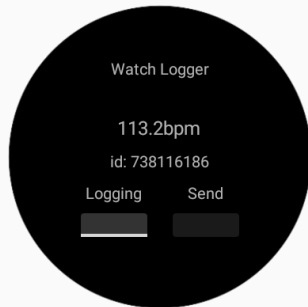
# Galaxy Watch를 이용한 심박수 측정

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- 심박수 및 가속도/각가속도 측정
- 측정된 결과의 내부 저장 및 FTP 서버로 전송



**Figure 1:** 어플리케이션 실행 화면

|    | Standard   | Standard      | Standard | Standard    | Standard  | Standard  | Standard     | Standard     | Standard     |
|----|------------|---------------|----------|-------------|-----------|-----------|--------------|--------------|--------------|
| 1  | id         | time          | bpm      | ax          | ay        | az        | gx           | gy           | gz           |
| 2  | 1069120841 | 1676271507741 | 82.0     | 0.18435353  | 6.5337763 | 7.1227503 | -0.061086524 | -0.013439035 | 0.0036651916 |
| 3  | 1069120841 | 1676271507795 | 82.0     | 0.25617957  | 6.5840545 | 7.1395097 | 0.1160644    | 0.014660766  | 0.021991149  |
| 4  | 1069120841 | 1676271507846 | 82.0     | 0.2681506   | 6.694188  | 7.1083846 | -0.31520647  | -0.018325957 | -0.08307768  |
| 5  | 1069120841 | 1676271507898 | 82.0     | 0.62009823  | 6.6295447 | 7.314286  | 0.012217305  | -0.10140363  | -0.043982297 |
| 6  | 1069120841 | 1676271507950 | 82.0     | 0.35673606  | 6.3661823 | 7.2711906 | -0.23945917  | -0.021991149 | -0.06841691  |
| 7  | 1069120841 | 1676271508002 | 82.0     | 0.32800564  | 6.6846113 | 7.2472486 | 0.012217305  | 0.0          | -0.12217305  |
| 8  | 1069120841 | 1676271508053 | 82.0     | 1.0271125   | 6.7229185 | 7.252037  | 0.33841935   | -0.047647487 | 0.26389378   |
| 9  | 1069120841 | 1676271508105 | 82.0     | 0.2825158   | 6.564901  | 7.1634517 | -0.07819075  | 0.15515977   | 0.095294975  |
| 10 | 1069120841 | 1676271508156 | 82.0     | 0.2825158   | 6.564901  | 7.1634517 | -0.07819075  | 0.15515977   | 0.095294975  |
| 11 | 1069120841 | 1676271508208 | 82.0     | 0.24420857  | 6.6630635 | 7.513005  | -0.15271631  | 0.09773844   | 0.19914207   |
| 12 | 1069120841 | 1676271508259 | 82.0     | 0.35913026  | 6.2488666 | 7.477092  | -0.06719518  | 0.103847094  | 0.24190263   |
| 13 | 1069120841 | 1676271508312 | 82.0     | -0.02873042 | 7.381324  | 7.9607205 | 0.17837265   | 0.103847094  | 0.19792034   |
| 14 | 1069120841 | 1676271508364 | 82.0     | 0.6368576   | 6.6654577 | 7.6710224 | -0.73548174  | 0.17348573   | 0.57787853   |

Figure 2: Galaxy Watch4로 테스트해본 결과물

## FTP와의 통신에 문제가 발생 시 예비로 쓸 수 있는 스크립트

```
#!/bin/bash

echo "Watch Logger - File Extractor"
echo "===== "
adb devices
read -p "Device: " device
echo "===== "
echo "List of available heart rate log files"
adb -s "$device" exec-out run-as kr.ac.hallym.watchlogger ls files
echo ""
read -p "File: " filename
adb -s "$device" exec-out run-as kr.ac.hallym.watchlogger cat files/"$filename" > "$filename"
echo "===== "
echo "Successfully extracted."
echo "===== "
```