GlobalTop Tech Inc.
宇誠科技股份有限公司

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|---|---|---|---|
| 文件名稱 | **miniGMouse-PS2 Sample Test Report** | 文件編號 | |
| | | 文件版次 | |
| 產品名稱 | miniGMouse-PS2(MTK Chipset) | 頁次/總頁數 | 1 of 9 |
| 產品型號 | | 制定單位 | R&D |
| 日期 | 2008/12/30 | PCB 版次 | V02 |
| 作者 | 劉文義(Lewis) | 測試地點 | GTOP |

會簽意見：

| | | 部門主管 | 直屬主管 | 專案主持人 |
|---|---|---|---|---|
| | | 陳冠伯<br>Robert | 陳冠伯<br>Robert | 劉文義<br>Lewis |

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Description

This report demonstrates the performance and electrical parameters of the miniGMouse-PS2.


Fig.1 Outline of miniGMouse-PS2

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The following parameters are tested:

- Current Consumption for Acquisition, Tracking, and RTC
- TTFF
- Outdoor Static C/N Value
- Waterproof Data

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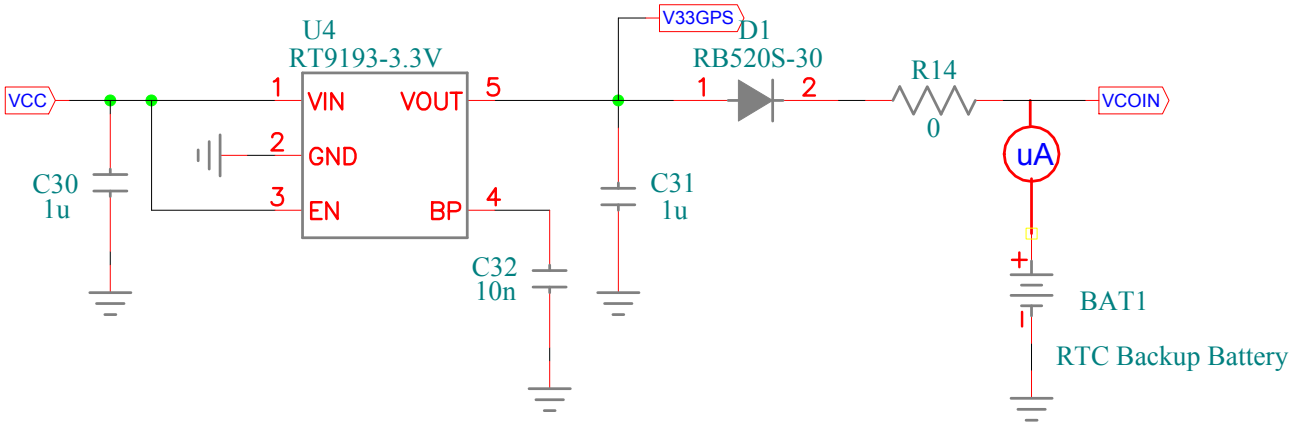
## 2. Test Plan

### Current Consumption for Acquisition, Tracking, and RTC

*Method*

For this test, the current of sample module during acquisition phase and tracking phase are recorded.




*The Result*

| Module Number | Acquisition (mA) | Tracking (mA) | RTC (uA) |
|---|---|---|---|
| 01 | 51.8 | 36.4 | 5.0 |
| 02 | 50.3 | 35.2 | 4.8 |
| 03 | 47.7 | 35.5 | 5.1 |
| 04 | 51.4 | 38.4 | 4.9 |
| 05 | 52.2 | 38.8 | 5.1 |
| 06 | 47.3 | 35.4 | 4.8 |
| 07 | 49.7 | 39.1 | 5.2 |
| 08 | 52 | 38.2 | 5 |
| 09 | 50.2 | 36.2 | 4.7 |
| 10 | 52.0 | 38.9 | 5.5 |

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**TTFF**

*The Method*

To determine the TTFF value, the time required for each module to become fully fixed in 3 different stages (Hot, Warm and Cold Start) are recorded. The software PowerGPS was used to command the module and measure the time.

*The Result*

| Module Number | Hot Start (s) | Warm Start (s) | Cold Start (s) |
|---|---|---|---|
| 01 | 0.8 | 33.5 | 34.6 |
| 02 | 0.8 | 37.2 | 38.1 |
| 03 | 0.7 | 31.8 | 33.1 |
| 04 | 0.8 | 32.1 | 35.4 |
| 05 | 0.7 | 32.1 | 36.7 |
| 06 | 0.8 | 34.1 | 35.3 |
| 07 | 0.8 | 29.6 | 34.6 |
| 08 | 0.8 | 32.5 | 34.4 |
| 09 | 0.7 | 31.9 | 32.6 |
| 10 | 0.7 | 31.1 | 34.2 |

## Outdoor C/N Value

*The Method*

For this test, we recorded the outdoor C/N value for each miniGMouse-PS2. The recording procedure is performed on the rooftop, directly under the sky.

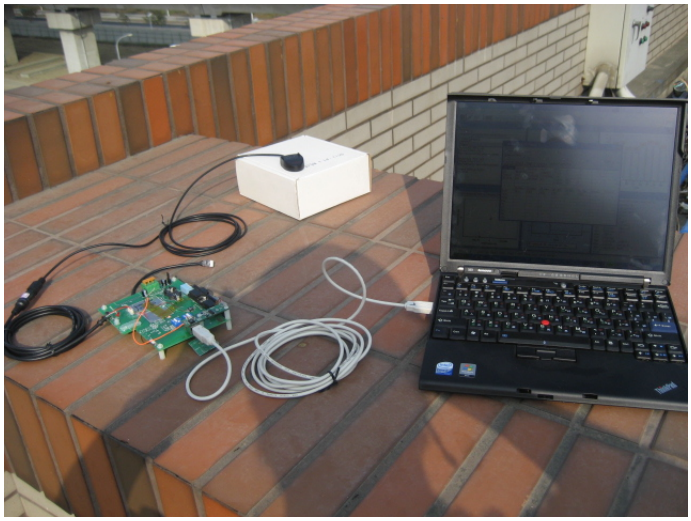

Fig.3 Test Configuration for Outdoor C/N

*The Result*

| Module Number | Outdoor C/N |
|---|---|
| 1 | 50 |
| 2 | 48 |
| 3 | 47 |
| 4 | 48 |
| 5 | 48 |
| 6 | 49 |
| 7 | 48 |
| 8 | 48 |
| 9 | 49 |
| 10 | 48 |

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**Waterproof data**

*The Method*

To determine the waterproof and sand-proof capability of miniGMouse-PS2, we have taken multiple samples and covered them with sand, and dipped them in water.

This test shows that no residue of sand or traces of water are found inside miniGMouse-PS2.

*The Result*

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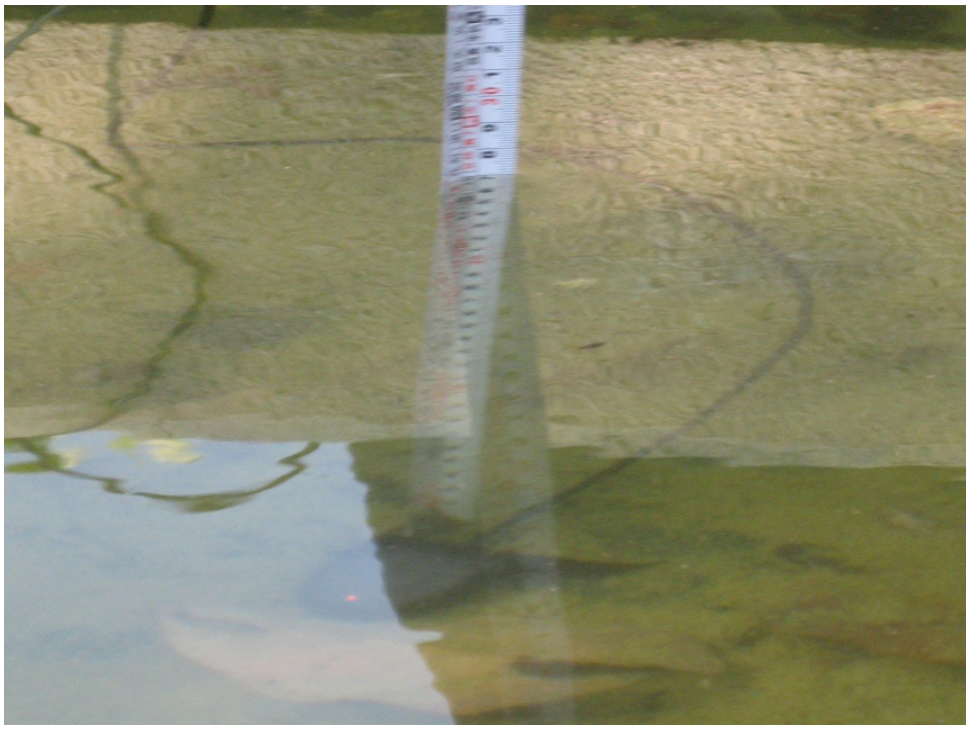
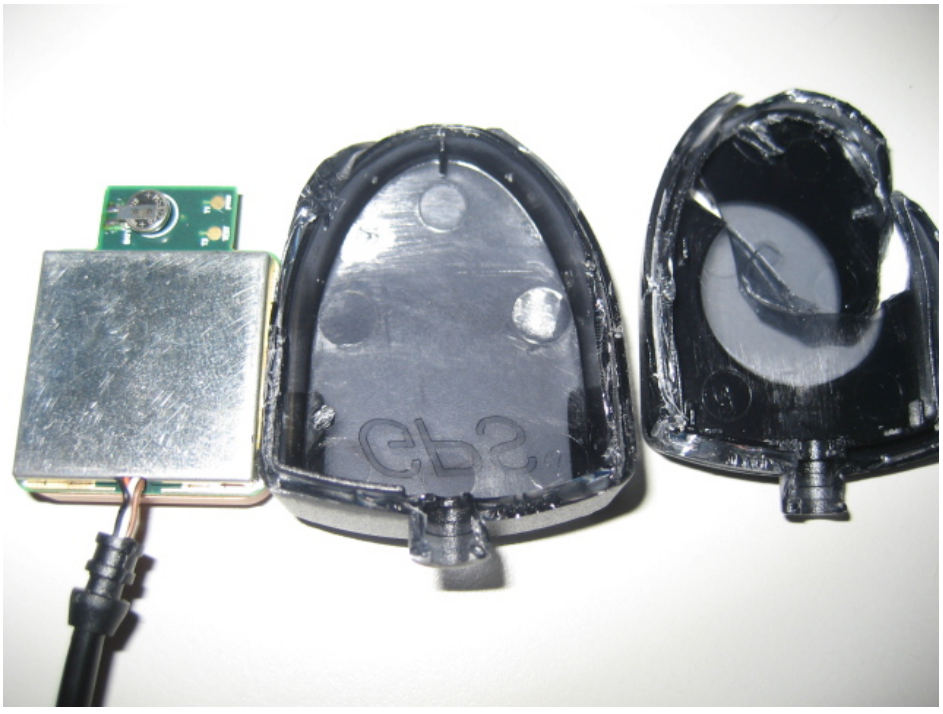
*When dipped under water (27cm deep, the device still performs well after 1 hour)*



*Internal structures, disassembled after the experiment*



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## 3. Summary

- From the data we've collected, we can conclude miniGMouse-PS2 has performed exceptionally well and has passed all the required test for seal of approval.
- About water proof , the miniGmouse pass IEC IP67 requirement

### Reference : The IP protection classification system

Figure 1

| NEMA Type Number | IEC Classification |
|---|---|
| 1 | IP10 |
| 2 | IP11 |
| 3 | IP54 |
| 3R | IP14 |
| 3S | IP54 |
| 4 and 4X | IP56 |
| 5 | IP52 |
| 6 and 6P | IP67 |
| 12 and 12X | IP52 |
| 13 | IP54 |

Figure 2

| FIRST NUMBER<br>Protection against solid objects | SECOND NUMBER<br>Protection against liquids |
|---|---|
| • **0** - no protection<br>• **1** - protected against solid objects up to 50mm i.e. accidental touch by hands.<br>• **2** - protected against solid objects up to 12mm i.e. fingers.<br>• **3** - protected against solid objects over 2.5mm (tools & wires).<br>• **4** - protected against solid objects over 1mm (tools, wires & small wires).<br>• **5** - protected against dust-limited ingress (no hurmful deposit).<br>• **6** - totally protected against dust | • **0** - no protection<br>• **1** - protected against vertically falling drops of water i.e. condesation.<br>• **2** - protected against direct sprays of water up to 15° from the vertical.<br>• **3** - protected against sprays to 60° from the vertical.<br>• **4** - protected against water sprayed from all directions - limited ingress permitted.<br>• **5** - protected against low pressure jets of water from all directions - limited ingress permitted.<br>• **6** - protected against strong jets of water i.e. for use on ship decks - limited ingress permitted.<br>• **7** - protected aganst the effects of immersion between 15cm and 1m.<br>• **8** - protected against long periods of immersion under pressure. |