

Response Time Test of IR Remote Controller and IR Receiver

Hardware version of T99X171T00	RCU part number	Hardware Version and date code of RCU
V005	R-C-MVN-BMM-BA01	V1.1 181207 / 1812

1 Hardware Portion

1.1 Test Environment Setup and Measurement Point



Figure 1: Test Environment

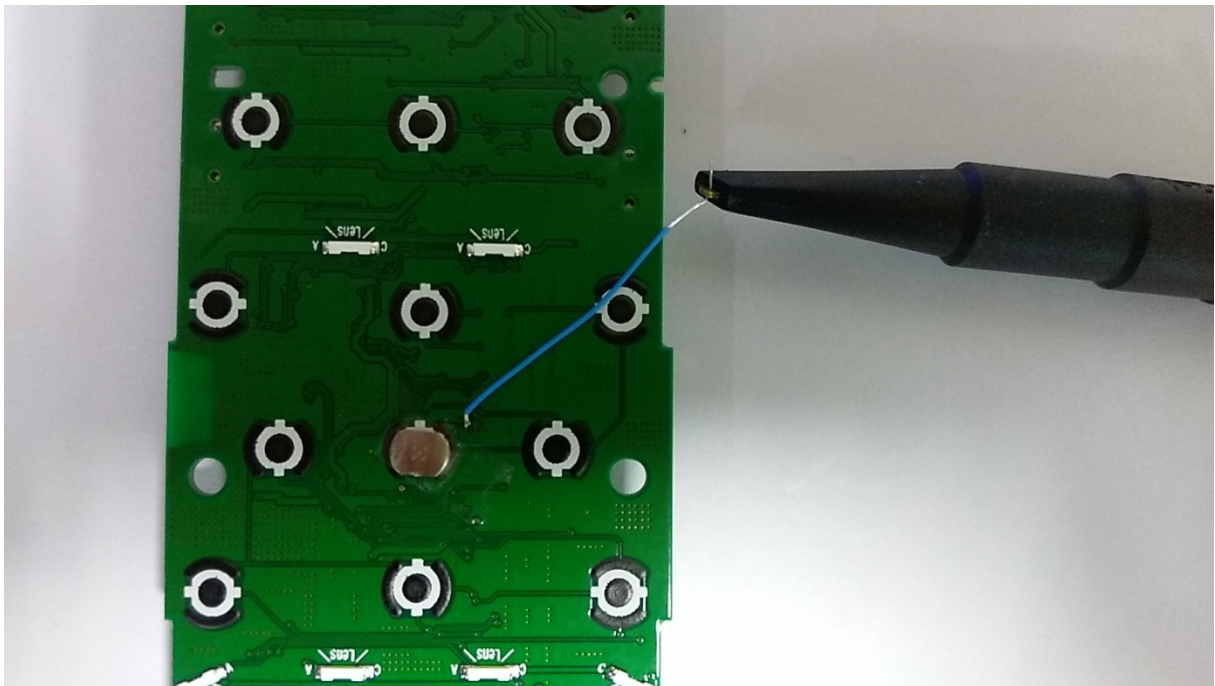


Figure 2: Measurement point of play button on RCU

2 Software Portion

We measured that the time from receiving IR interrupt in kernel driver to send keycode in PhoneWindowManager is **1ms** (106047ms-106046ms).

"eventTime=106046 ms = 106.046 s " means the boot time of the kernel.

At this time, the entire IR signal is received.

"Current:106047 ms=106.047 s" means the kernel had processed the IR key code finish, the UI is ready to reaction.

So, the IR response time of SW part is 1ms (106047 ms - 106046 ms)

"eventTime=106128 ms = 106.128 s " means the time which kernel receive the IR signal of key **button release**.

Because the minimun time unit is 1 ms.

So, "eventTime =106128" the same as "Current", means the the time less than 1ms.

```
03-12 10:06:50.359 3286 3362 I WindowManager: [framework][WindowManager][Info] KeyEvent [ action=ACTION_DOWN, keyCode=KEYCODE_DPAD_DOWN, scanCode=108, metaState=0, flags=0x0, repeatCount=0, eventTime=106046, downTime=106046, deviceId=3, source=0x301 } Current: 106047
03-12 10:06:50.359 3286 3362 D WindowManager: >>>> KeyBeforeDispatching keyCode : 20 -processed. Application handle the key.
03-12 10:06:50.440 3356 3362 I WindowManager: [framework][WindowManager][Info] KeyEvent [ action=ACTION_UP, keyCode=KEYCODE_DPAD_DOWN, scanCode=108, metaState=0, flags=0x0, repeatCount=0, eventTime=106128, downTime=106046, deviceId=3, source=0x301 } Current: 106128
03-12 10:06:50.440 1 106 105032821 audit: audit lost=200 audit rate limit=5 audit backlog limit=64
```

3 Conclusion

IR response speed that start from pressing play button on the RCU to send keycode in PhoneWindowManager is about 96.6ms.

IR Response Time Test Result		
Hardware: Pressing play button on the RCU	Software: Receiving IR interrupt in kernel driver to send keycode in PhoneWindowManager	Result (ms)
95.6 ms	1 ms	96.6