



# MT7686 and MT7682 HDK Power Measurement Guide

Version: 1.1

Release date: 1 Aug 2017

---

© 2017 MediaTek Inc.

This document contains information that is proprietary to MediaTek Inc. ("MediaTek") and/or its licensor(s). MediaTek cannot grant you permission for any material that is owned by third parties. You may only use or reproduce this document if you have agreed to and been bound by the applicable license agreement with MediaTek ("License Agreement") and been granted explicit permission within the License Agreement ("Permitted User"). If you are not a Permitted User, please cease any access or use of this document immediately. Any unauthorized use, reproduction or disclosure of this document in whole or in part is strictly prohibited. THIS DOCUMENT IS PROVIDED ON AN "AS-IS" BASIS ONLY. MEDIATEK EXPRESSLY DISCLAIMS ANY AND ALL WARRANTIES OF ANY KIND AND SHALL IN NO EVENT BE LIABLE FOR ANY CLAIMS RELATING TO OR ARISING OUT OF THIS DOCUMENT OR ANY USE OR INABILITY TO USE THEREOF. Specifications contained herein are subject to change without notice.



## MT7686 and MT7682 HDK Power Measurement Guide

### Document Revision History

---

Revision	Date	Description
1.0	30 June 2017	Initial release
1.1	1 Aug 2017	Added the support for MT7682 power measurement.



## Table of Contents

---

1.	Introduction.....	1
2.	Hardware Configuration .....	2
2.1.	Connecting the power source.....	2
2.2.	Measuring the power consumption .....	2



## Lists of Tables and Figures

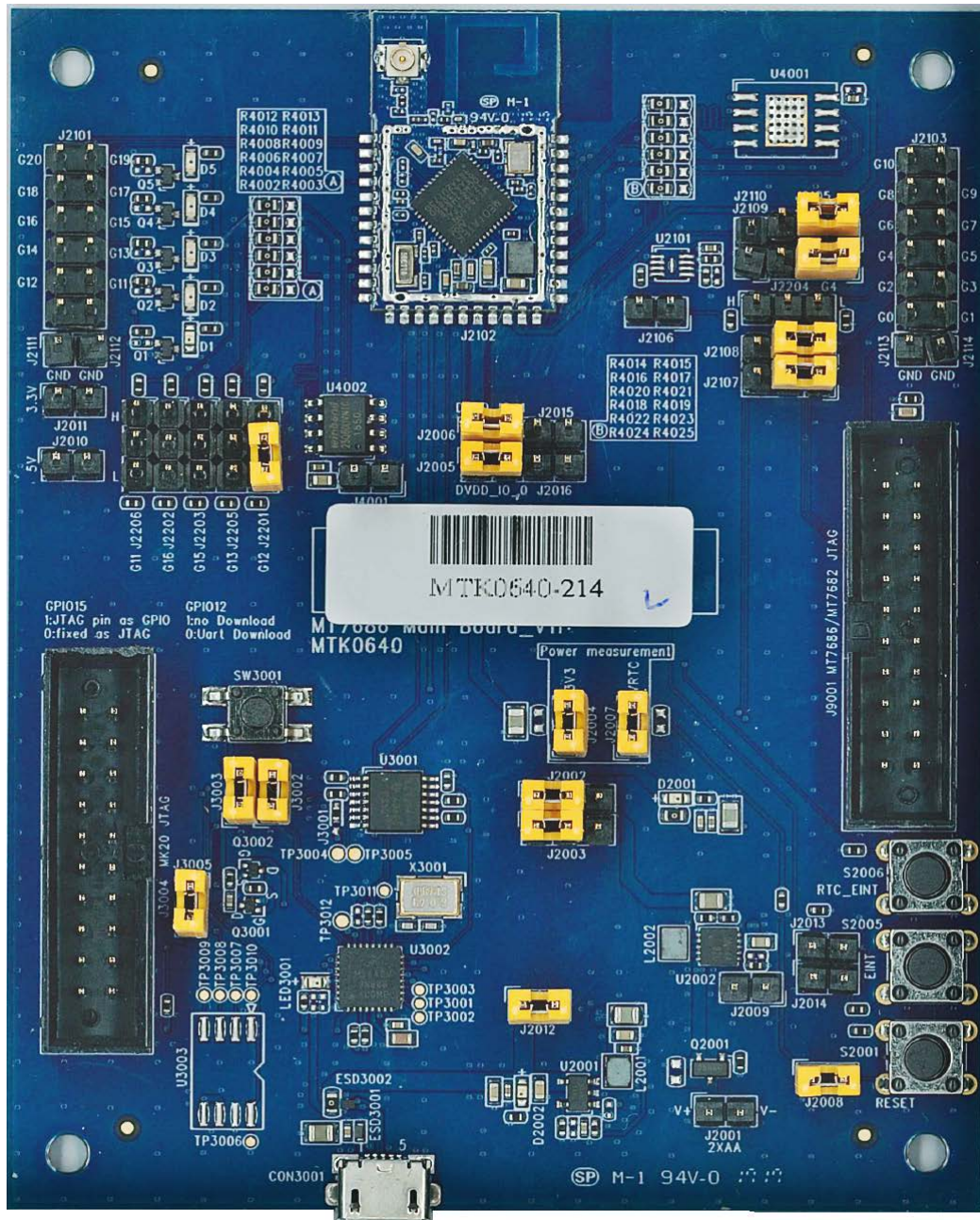
---

Figure 1. Front view of the MT7686 HDK.....	1
Figure 2. Power source connection.....	2
Figure 3. Power domain of the chip (J2004) and RTC (J2007).....	3
Figure 4. Example measurement of the RTC current.....	4

## 1. Introduction

MediaTek MT7686 and MT7682 HDKs provides a low quiescent current development platform to design, prototype, evaluate and implement Internet of Things (IoT) applications. This document guides you on how to measure the MT7686 HDK's power consumption. MT7686 and MT7682 HDKs include a main board and a stamp module. The HDKs use the same main board, the difference is in the stamp module.

The front view of the MT7686 HDK is shown in Figure 1.



**Figure 1. Front view of the MT7686 HDK**

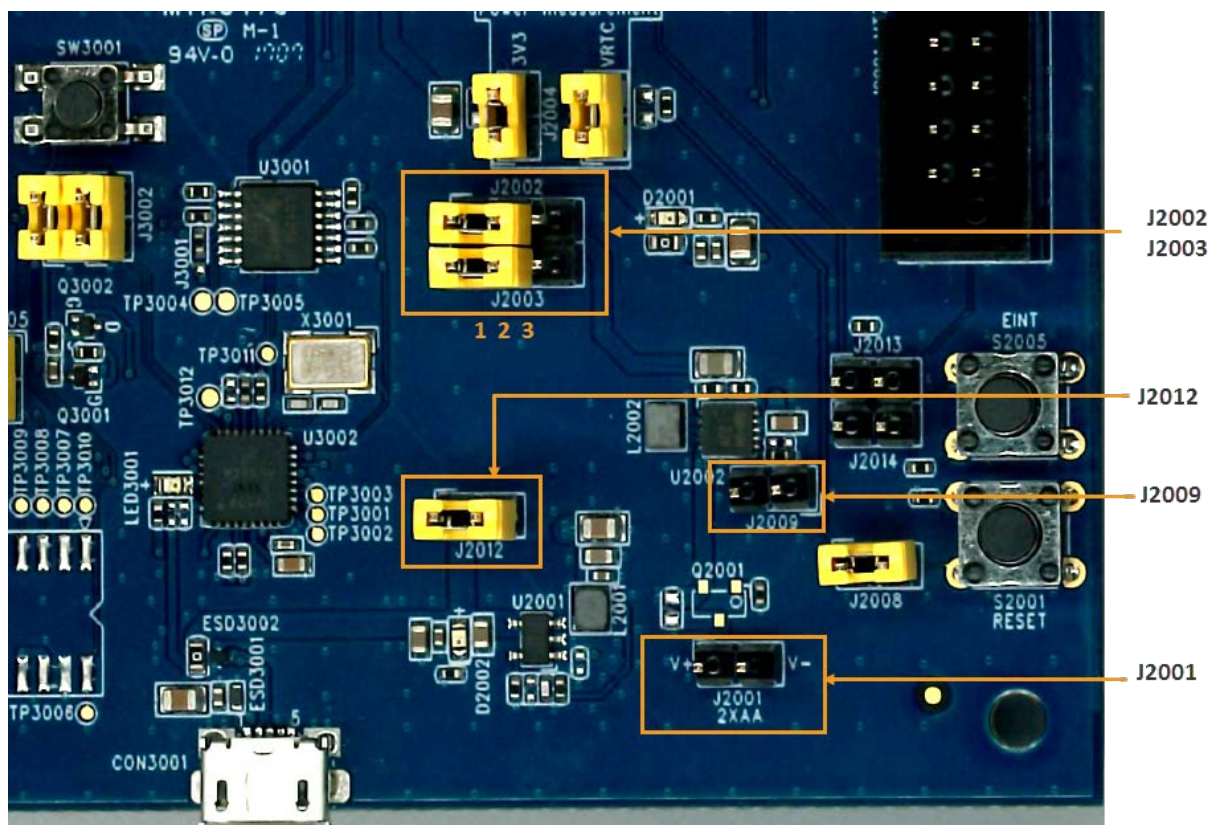


## 2. Hardware Configuration

## 2.1. Connecting the power source

Power supply for the MT7686 HDK is provided either through a micro-USB cable or 2xAA battery. Before connecting the power source, consider the following:

- 1) Using a micro-USB cable
  - a) Jumper J2012 should be short.
  - b) Jumpers J2002 & J2003 should be short at pin 1 and pin 2 (see Figure 2).
- 2) Using 2xAA battery.
  - a) Verify the direction of the electrode (J2001) on the HDK (see Figure 2).
  - b) Jumper J2009 should be short.
  - c) Jumpers J2002 and J2003 should be short at pin 2 and pin 3.



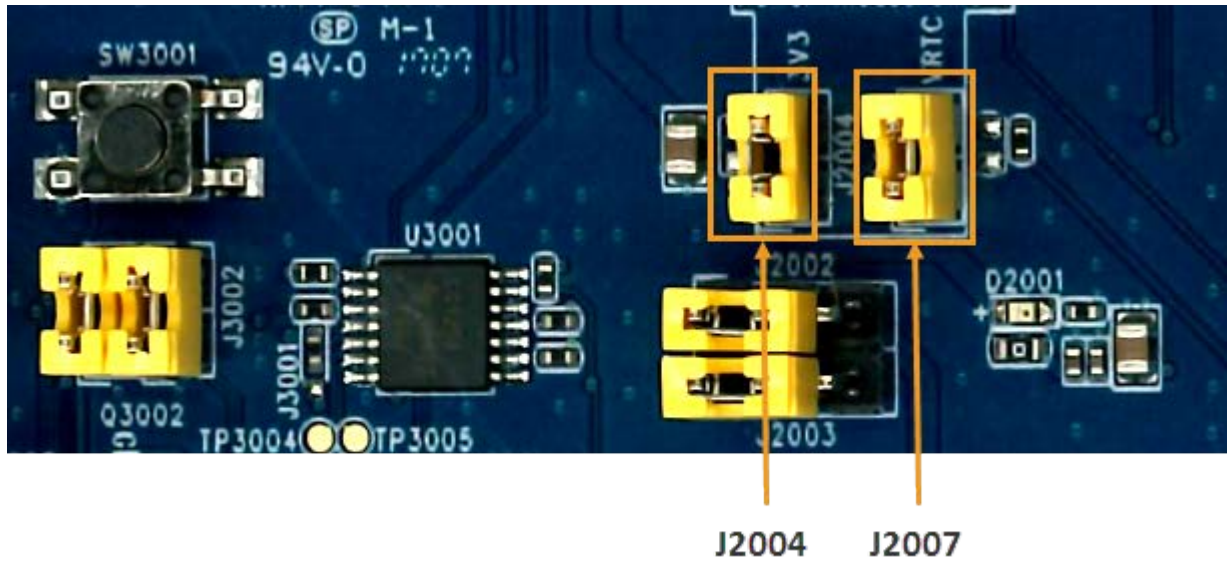
**Figure 2. Power source connection**

## 2.2. Measuring the power consumption

The power consumption is measured at 3V3 power domain and for the real-time clock (RTC), as shown in Figure 3. Remove the corresponding jumper, either J2004 (for the chip power domain) or J2007 (for RTC) and attach a current meter. A typical current meter is shown in Figure 4 that measures RTC current.

## MT7686 and MT7682 HDK Power Measurement Guide

Note, that before measuring the current consumption, remove the jumpers J2201, J3002 and J3003. These jumpers are used for download or debug purposes and might add extra current consumption on chip domain.



*Figure 3. Power domain of the chip (J2004) and RTC (J2007)*

# MT7686 and MT7682 HDK Power Measurement Guide

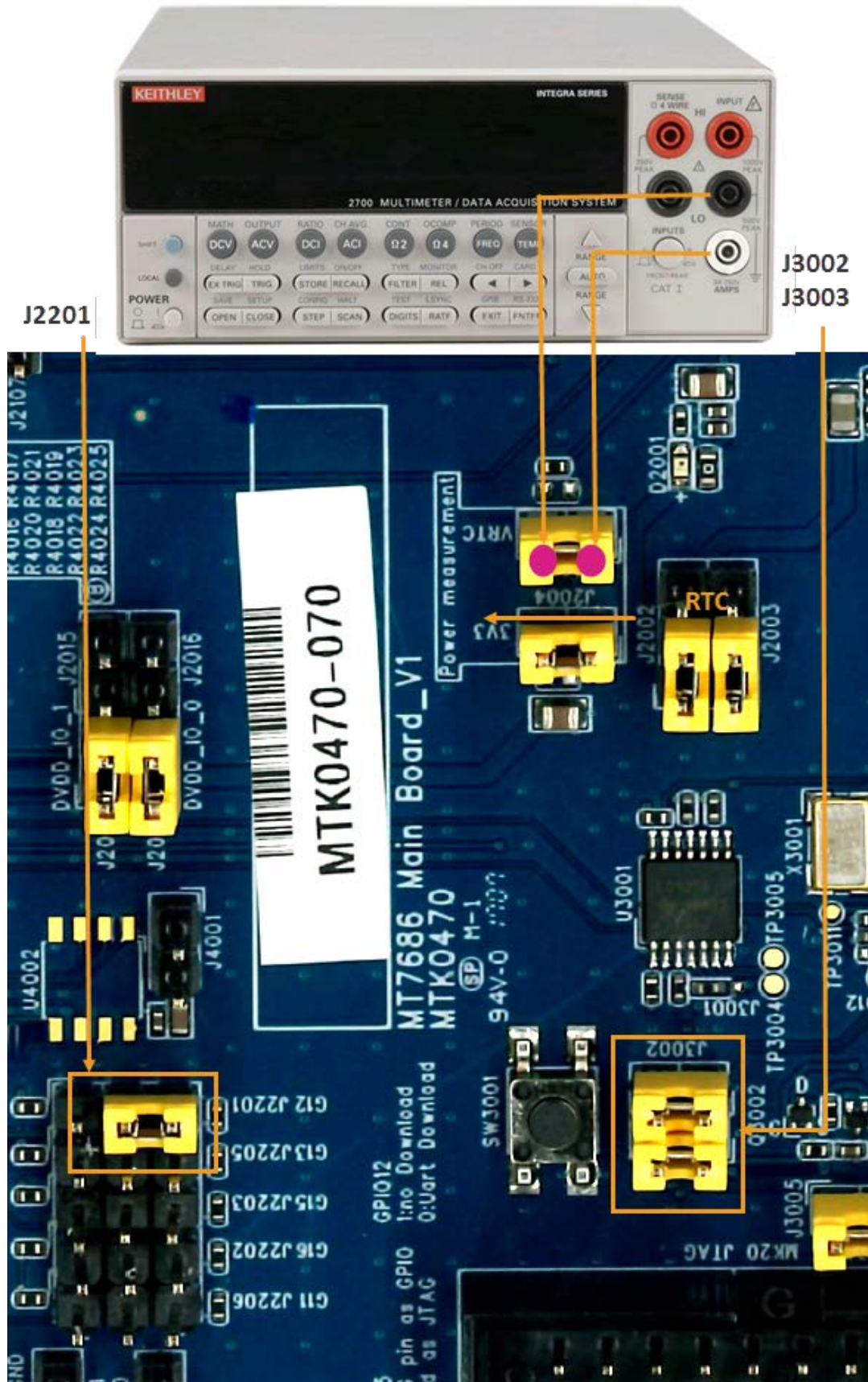


Figure 4. Example measurement of the RTC current