

TW-2101 Module Specification

Revision: 0.2 Draft

TRANSYSTEM INC.

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History

Revision	Change Note	Author	Date
0.1 Draft	Initial version	S.C. Yen	May 20, 2016
0.2 Draft	- updated model number, added electrical spec.	S.C. Yen	May 25, 2016

Overview:

- Model Name: TW-2101
- TW-2101 module is a low-cost, low-power consumption IoT module, which integrated a 1x1 802.11b/g/n Wi-Fi interface, and provides GPIO for intelligent control, and an UART interface for device communication. The module provides an IPEX socket for an external antenna, and 8Mbits flash memory to reduce the size of your final product.

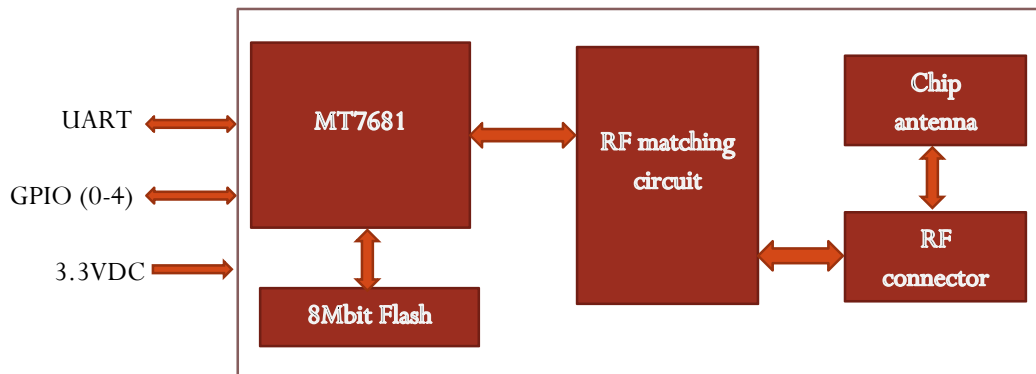
TW-2101 module is based on MediaTek MK7681 chipset, it embeds a 32-bit RISC MCU to drive 802.11b/g/n interface, and TCP/IP protocol stack for networking applications.



Key Features:

- Small footprint: 18 x 15 x 1.7 mm
- Based on MediaTek MK7681 1x1 MIMO Platform, as well as LinkIt connect development platform
- 32-bit RISC microprocessor MCU
- one IPEX antenna connectors enable design flexibility to utilize different transmit/receive chains to communicate with others.
- Support UART for device communication, & GPIO for control external devices
- Integrated Wi-Fi chip antenna and 8Mbits flash
- Integrated DC power regulator for 3.3VDC power source
- Supports IEEE802.11b/g/n backward compatibility allows inter-operability among multiple WiFi networks
- 802.11i WPA security support for WPA-PSK, WPA2-PSK, and WPA/WPA2-PSK
- Operation in station or SoftAP mode
- RoHS compliance

Block Diagram:



Integrated w/ MTK LinkIT:



TW-2101 module platform:

TW-2101 module is based on MediaTek MT7681, a compact Wi-Fi System-on-Chip (SoC), it can connect to other smart devices or to cloud applications and services w/ customized firmware. Connectivity on TW-2101 module is achieved using Wi-Fi in either Wi-Fi station or access point (AP) mode.

In Wi-Fi station mode, TW-2101 module connects to a wireless AP and can communicate with web services or cloud servers.

In AP mode, TW-2101 module acts as an AP, enabling other wireless devices to connect to it directly. Using this mode that enables the devices to be controlled.

To control the device, TW-2101 module provides five GPIO pins and one UART port. In addition, PWM is supported in software for applications.

TW-2101 electrical spec.:

Network Standard	IEEE802.11b/g/n Compliant
Frequency	2.4GHz ISM radio band
Channel	1~14
Modulation	DSSS, OFDM, 64-QAM, 16-QAM, QPSK, BPSK, DQPSK, DBPSK
Security	WPA/WPA2 personal
Operation Voltage	3.3VDC
Temperature	Operating: 0°C ~ +65 °C; Storage: -40°C ~ +85 °C
Humidity	Operating: 10~95% (non-condensing); Storage: 5~95% (non-condensing)
Power consumption	Peak power consumption: 1,430 mini watts Average power consumption: 720 mini watts Sleeping mode: 75 mini watts Power down mode: 60 micro watts
RF performance	Maximum TX power: +18dBm

TW-2101 pin assignment:

