784 Installation Manual

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Modification History

Rev.	Date	Author	Changes
1.0	09-02-2017	R. Keating	

Input Documents and Information

Ref	Document ID	Version	Date	Description
1)				
2)				
3)				
4)				

References and Guidelines

Ref.	Document ID	Date	Description
1)			
2)			
3)			
4)			
5)			
6)			
7)			
8)			
9)			
10)			

Definitions and Acronyms

Acronym	Description
PSU	Power Supply Unit
V	Voltage

Contents

1.

1 Pin Definitions

Figure 1-1 shows the mechanical dimensions for the 16-pin SMD package.

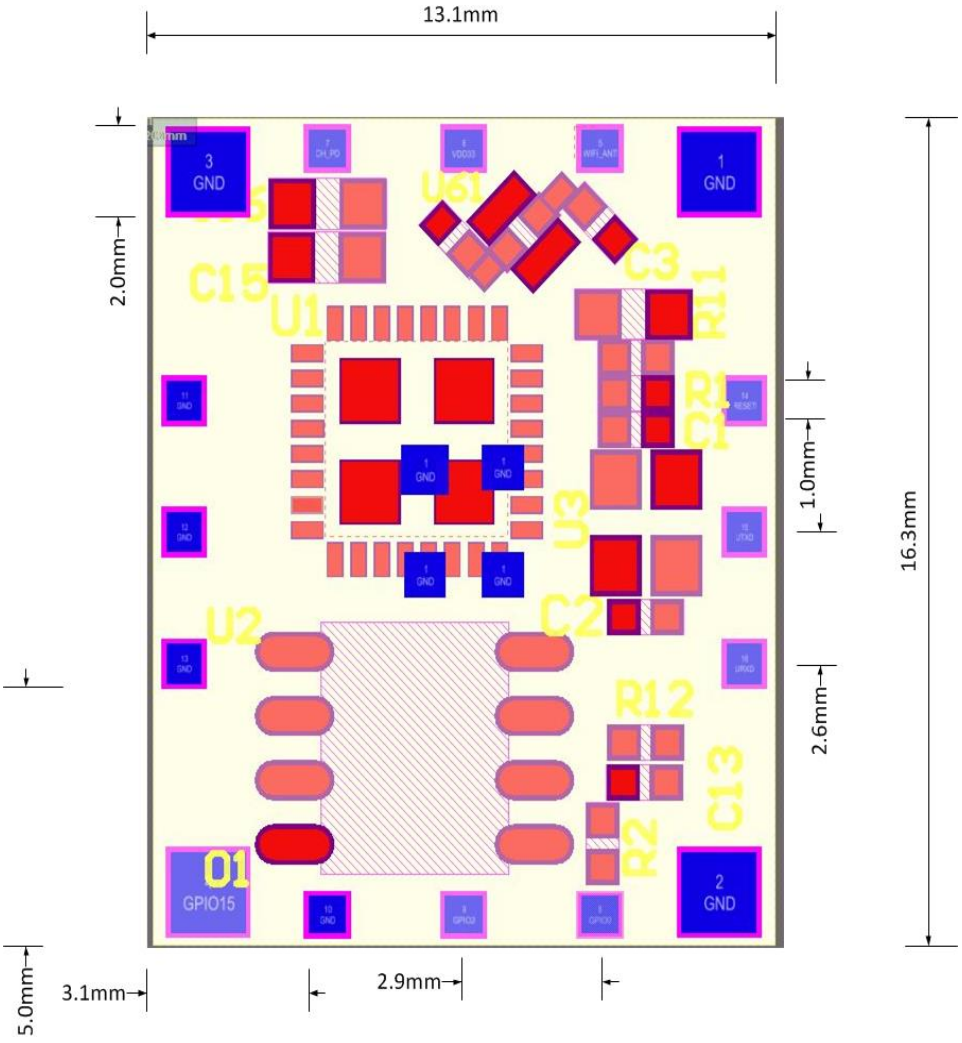


Figure 1-2 shows the pin names for the 16-pin SMD package.

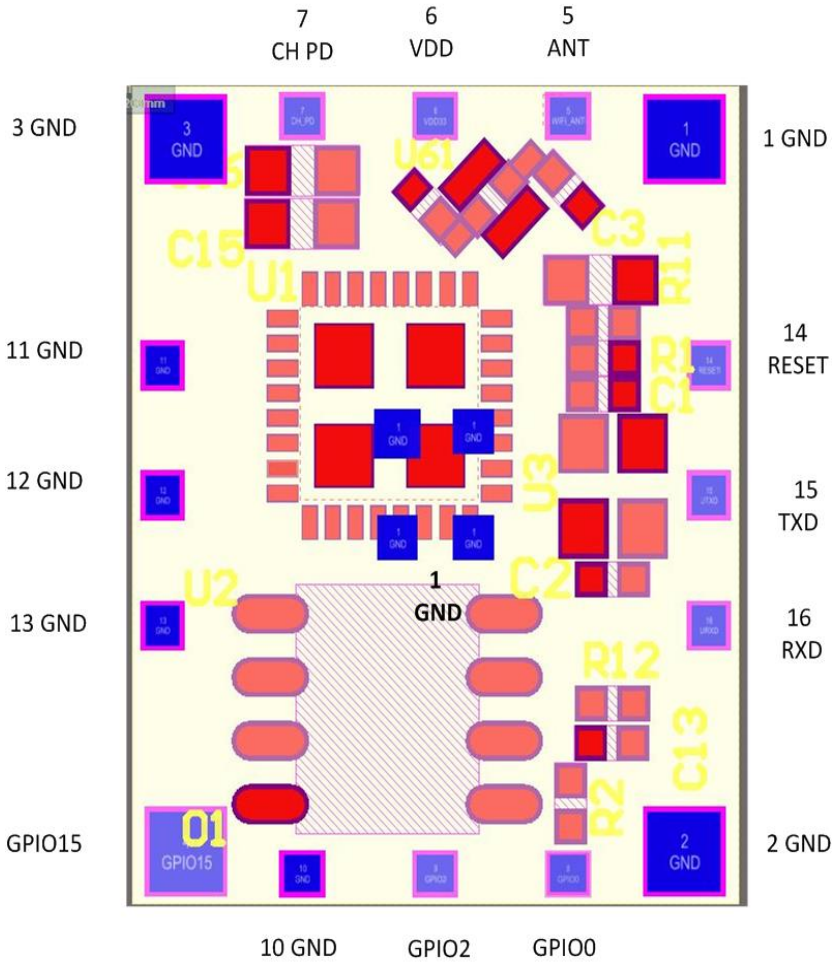


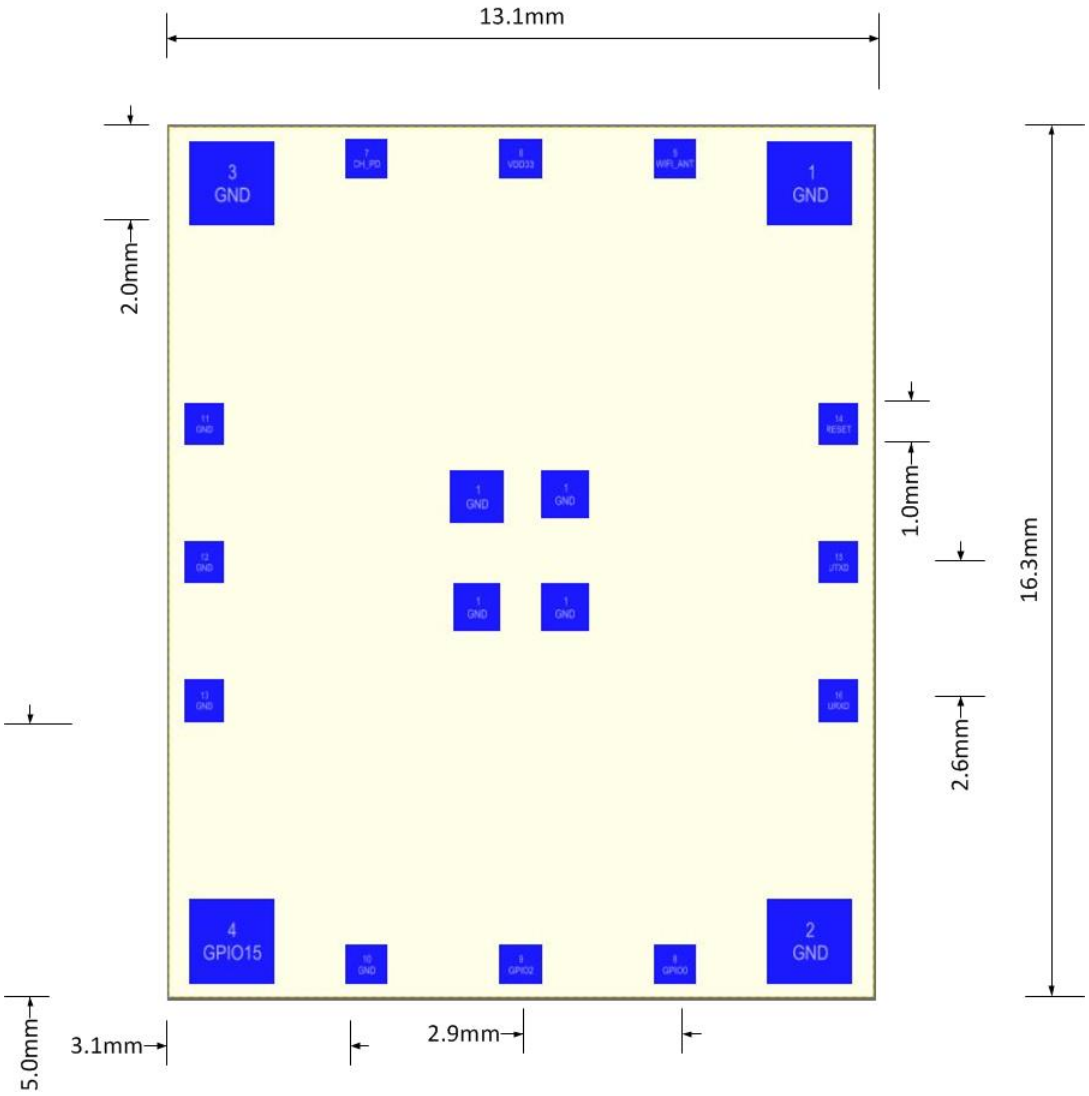
Table 1-1 Pin Names and Functions

Pin	Name	Type	Function
1	GND	P	Power Ground
2	GND	P	Power Ground
3	GND	P	Power Ground
4	GPIO15	I/O	General purpose I/O 15
5	ANT	I/O	RF Antenna Interface
6	VDD	P	Power 3.0V ~ 3.6V
7	CHIP_PU	I	High: On, chip works properly Low: Off, small amount of current consumed.
8	GPIO0	I/O	General purpose I/O 0
9	GPIO2	I/O	General purpose I/O 2
10	GND	P	Power Ground
11	GND	P	Power Ground
12	GND	P	Power Ground
13	GND	P	Power Ground
14	EXT_RSTB	I	External reset signal (Low voltage level: Active)
15	UART TXD	O	UART Serial Transmit
16	UART RXD	I	UART Serial Receive

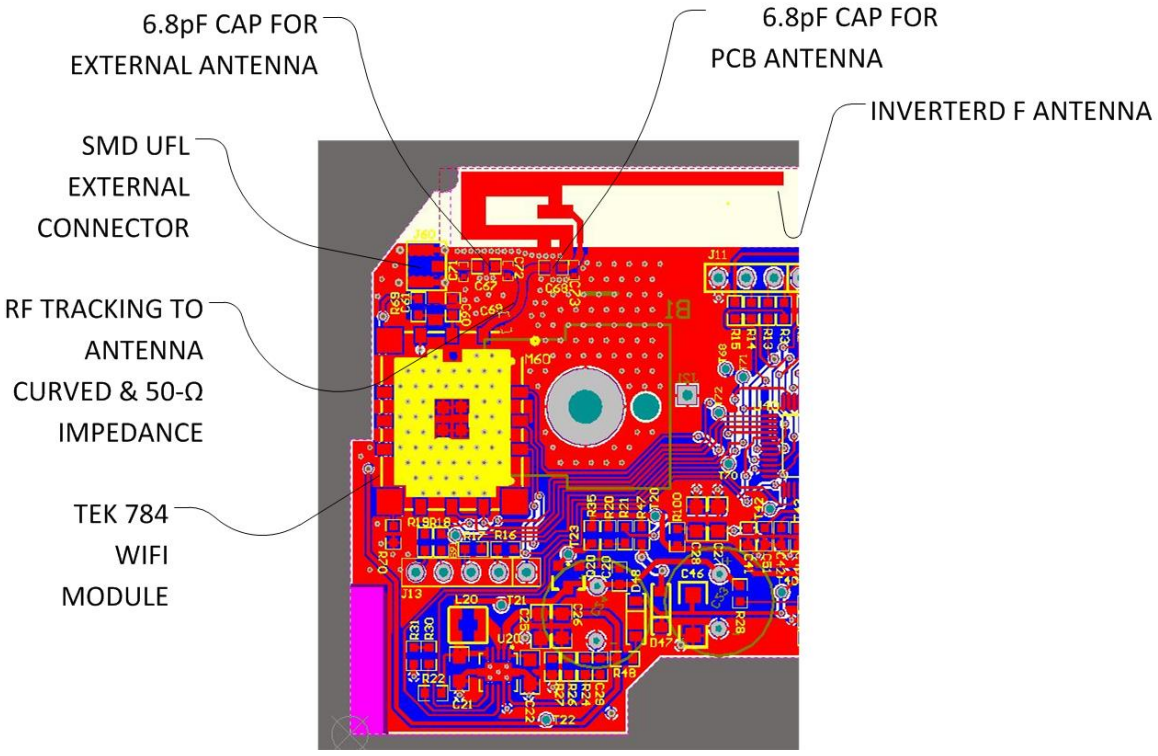
2 TEK 784 Footprint

2.1 *TEK 784 Module Footprint.*

Use the Figure 6-1 as a footprint for installing TEK 784 module on PCB.



2.2 *TEK 784 Module Example Footprint on carrier PCB.*


6.8pF CAP FOR
EXTERNAL ANTENNA
6.8pF CAP FOR
PCB ANTENNA
INVERTERD F ANTENNA
SMD UFL
EXTERNAL
CONNECTOR
RF TRACKING TO
ANTENNA
CURVED & 50-Ω
IMPEDANCE
TEK 784
WIFI
MODULE

Follow these RF trace routing recommendations:

a) RF traces must have 50-Ω impedance.
b) RF traces must not have sharp corners.
c) RF traces must have via stitching on the ground plane beside the RF trace on both sides.
d) RF traces must be as short as possible. The antenna, RF traces, and module must be on the edge of the PCB product in consideration of the product enclosure material and proximity.

2.3 *TEK784 Module Layout Recommendations.*

Follow these module layout recommendations:

a) Ensure a solid ground plane and ground vias under the module for stable system an thermal dissipation.
b) Do not run signal traces underneath the module on the layer where the module is mounted.
c) Signal traces can be run on a third layer under the solid ground layer and beneath the module mounting.
d) Run the host interfaces with ground on the adjacent layer to improve the return path.
e) Route the signals as short as possible to the host.

2.4 *SMT Recommendations.*

Table 7-3. Temperature Values for Reflow Profile

Item	Temperature °C	Time (s)
Preheat	140 to 200	80 to 120
Soldering	220	60 ± 10
Peak Temperature	250 maximum	10

NOTE

It is not recommended to use conformal coating or similar material on the TEK 784 module. This coating can lead to localized stress on the SMT solder connections inside the module and impact the device reliability. Care should be taken during module assembly process to the final PCB to avoid the presence of foreign material inside the module.