RP-M110 Module

Product Introduction

< RP-M100 >

1. Stack Version
   - ▶ Supports Zigbee 2006
   - ▶ Supports Mesh Networks

2. MAC Version
   - ▶ IEEE 802.15.4 based communication
   - ▶ Supports Star, Tree, Peer to Peer Networks

3. Common for Both Versions
   - ▶ 45Pins SMD type package
   - ▶ External Helical Antenna(1dBi Gain) type
   - ▶ Data input/output by UART, ADC, Interrupt(KEY) and GPIO Ports
   - ▶ Supports AT commands and thus AT command based setup is possible.
   - ▶ Supports power saving mode
   - ▶ Allows users to confirm data reception by using the ACK Option
   - ▶ It uses sixteen channels (No.11 ~No. 26) in 2.400 ~ 2.4835 GHz Band (ISM Band)

※ RP-M110 comes in two versions according to the downloaded firmware – Stack version and MAC version.

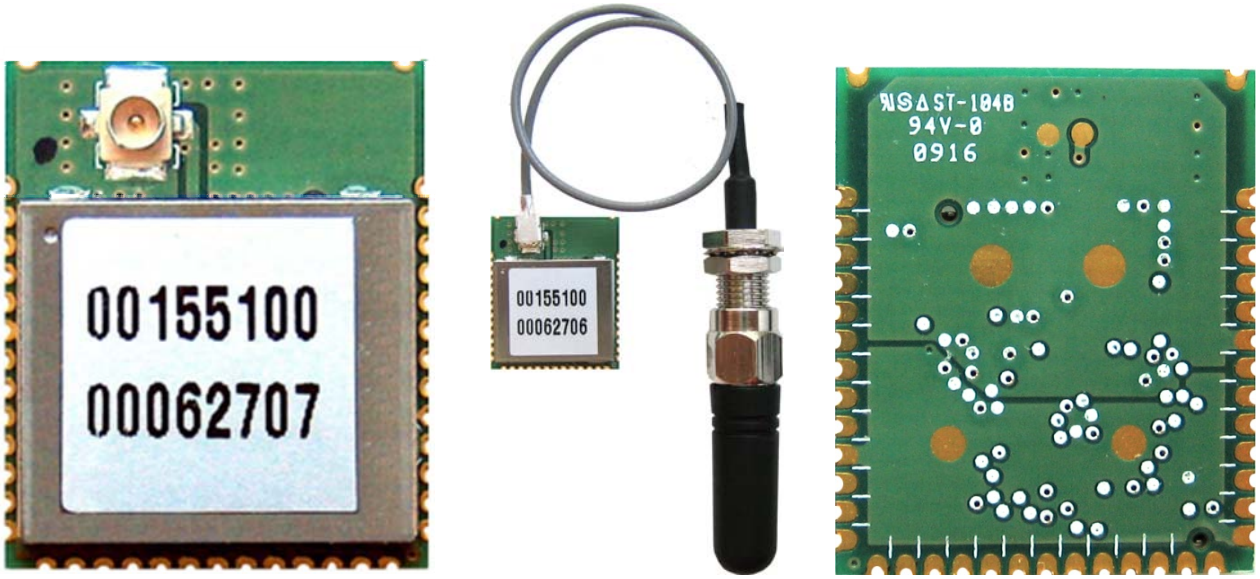
RP-M110(Stack): External Helical Antenna(1dBi Gain) type, same as **FZ750BS**.

Please refer to the FZ7**5**0BX manual for detail operation.

RP-M110(MAC): External Helical Antenna(1dBi Gain) type, same as **FZ760BS**.

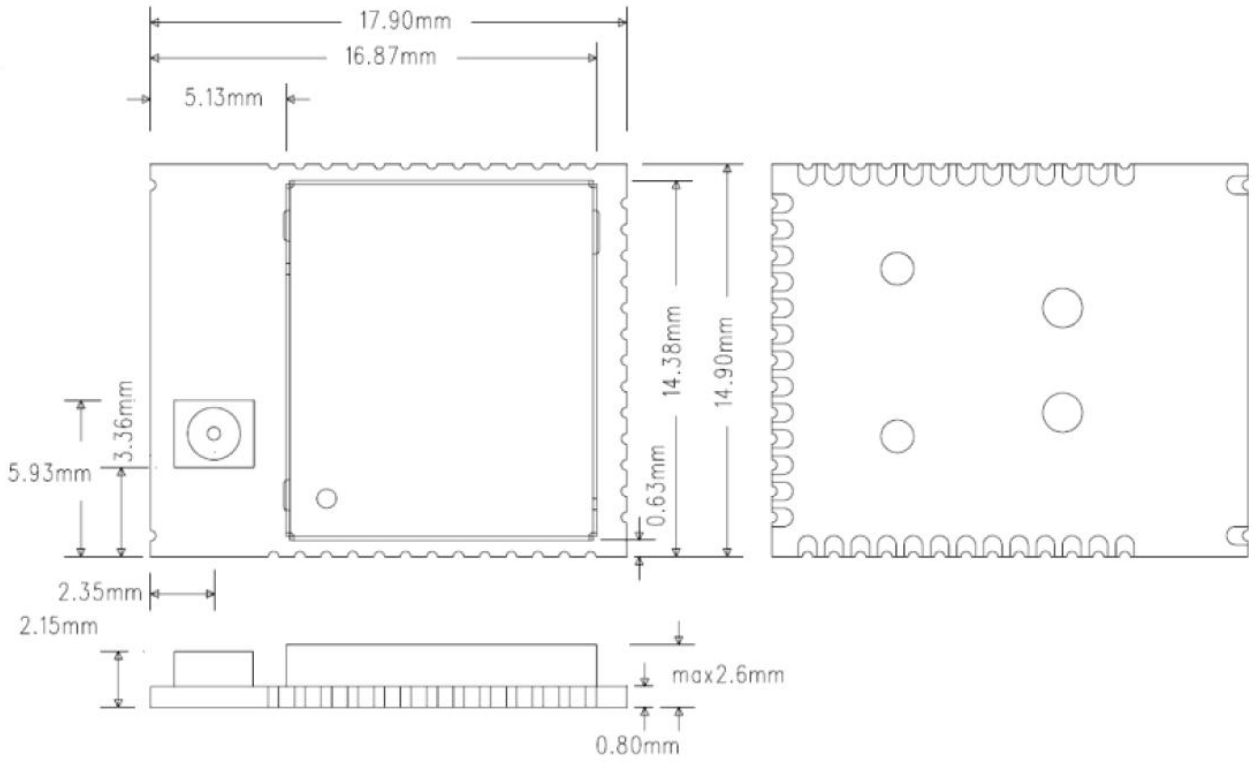
Please refer to the FZ7**6**0BX manual for detail operation.

Product Appearance

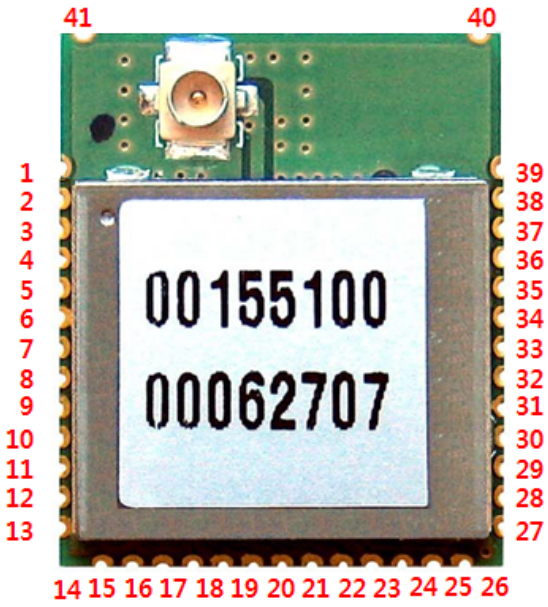


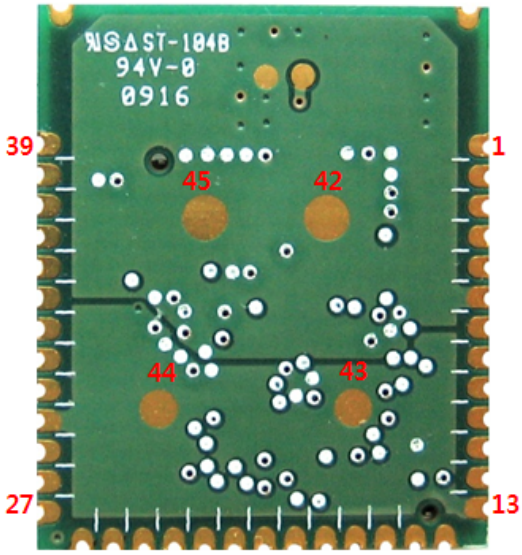
Product Dimension

Unit :mm



Pin Description



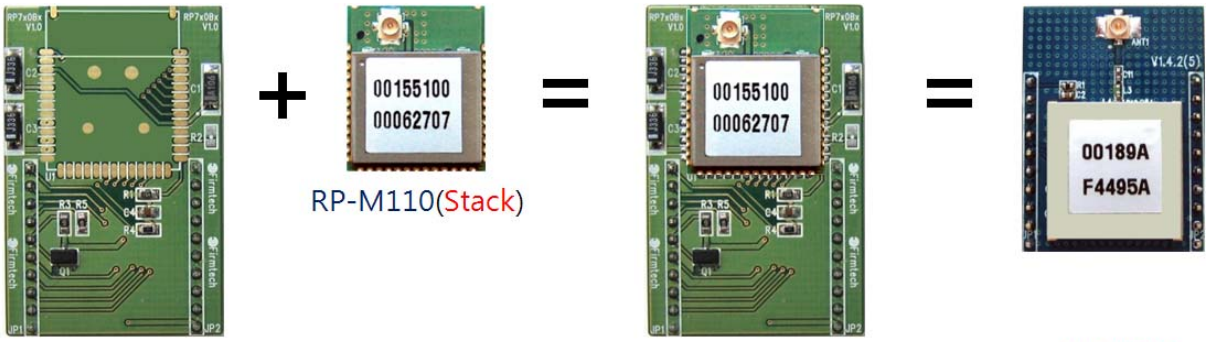


Pin No.	Port Name	Function	Input/Output	Remarks
1	ADC	Analog Data Input	I	
2	**NC**	-	-	
3	**See “Reference Circuit (4)”**	-	-	
4	**See “Reference Circuit (4)”**	-	-	
5	**See “Reference Circuit (5)”**	-	-	
6	AGND	Analog Ground	-	
7	**See “Reference Circuit (4)”**	-	-	
8	**See “Reference Circuit (4)”**	-	-	
9	ISP	-	-	
10	**See “Reference Circuit (5)”**	-	-	
11	RESET	Device Reset	I	
12	VCC	3.3V DC	I	
13	DGND	Digital Ground	-	
14	**NC**	-	-	
15	**NC**	-	-	
16	**NC**	-	-	
17	**NC**	-	-	
18	**NC**	-	-	
19	**NC**	-	-	
20	TX	Transfer Data	O	

21	RX	Received Data	I	
22	STATUS	Display Status	O	
23	ERROR	Display Status	O	
24	OK	Display Status	O	
25	**NC**	-	-	
26	**See “Reference Circuit (5)”**	-	-	
27	INT(KEY)	Digital Data Input	I	
28	**NC**	-	-	
29	**NC**	-	-	
30	DGND	Digital Ground	-	
31	**See “Reference Circuit (4)”**	-	-	
32	GPIO 7	Digital Data Input / Output	I/O	
33	GPIO 6	Digital Data Input / Output	I/O	
34	GPIO 5	Digital Data Input / Output	I/O	
35	GPIO 4	Digital Data Input / Output	I/O	
36	GPIO 3	Digital Data Input / Output	I/O	
37	GPIO 2	Digital Data Input / Output	I/O	
38	GPIO 1	Digital Data Input / Output	I/O	
39	GPIO 0	Digital Data Input / Output	I/O	
40	**NC**	-	-	
41	**NC**	-	-	
42	AGND(Bottom)	Analog Ground	-	
43	DGND(Bottom)	Digital Ground	-	
44	DGND(Bottom)	Digital Ground	-	
45	AGND(Bottom)	Analog Ground	-	

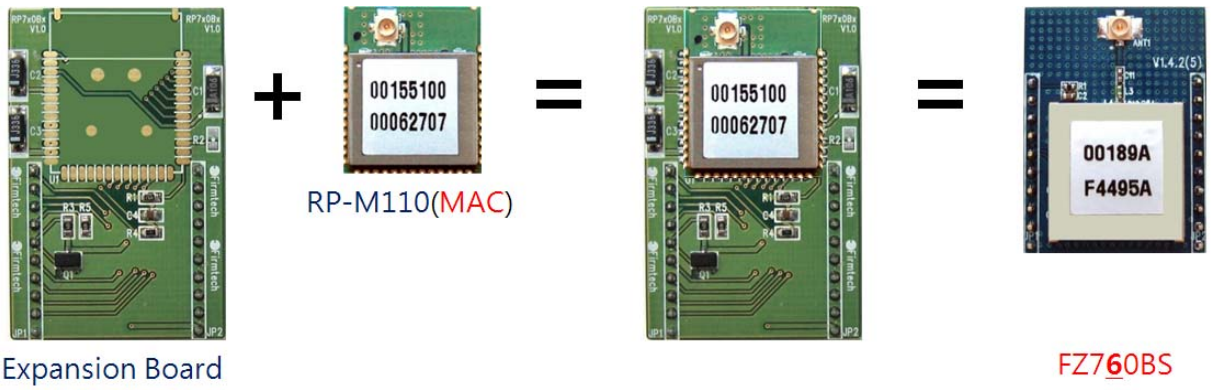
Product Content

(1) Stack Version



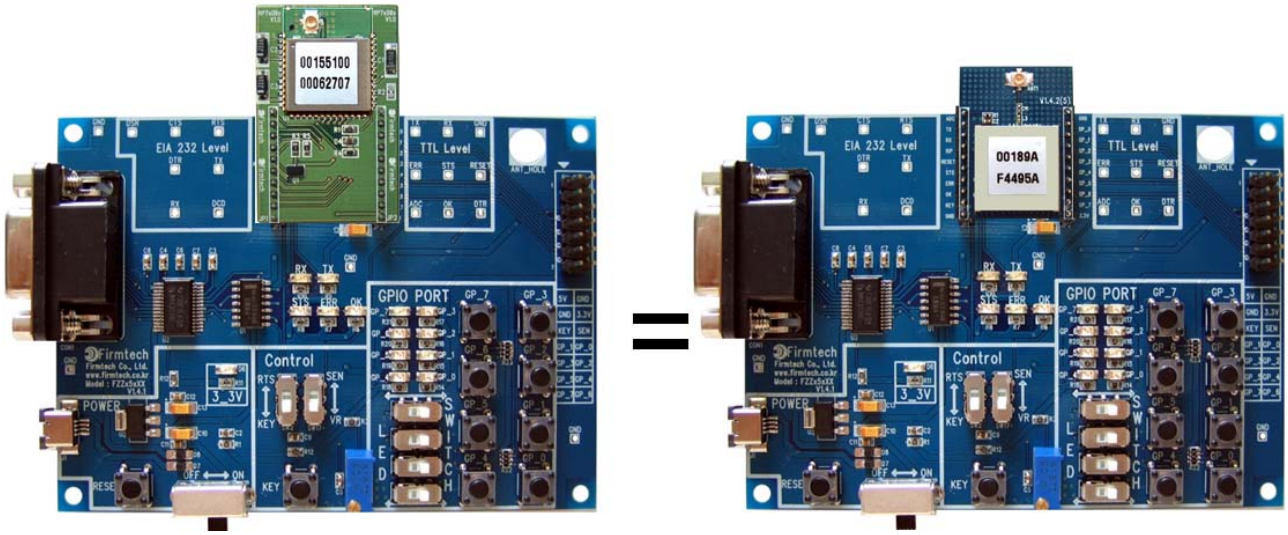
RP-M110 functions is the same as FZ750BS when you use it together with the Expansion Board after downloading the Stack firmware.

(2) MAC Version



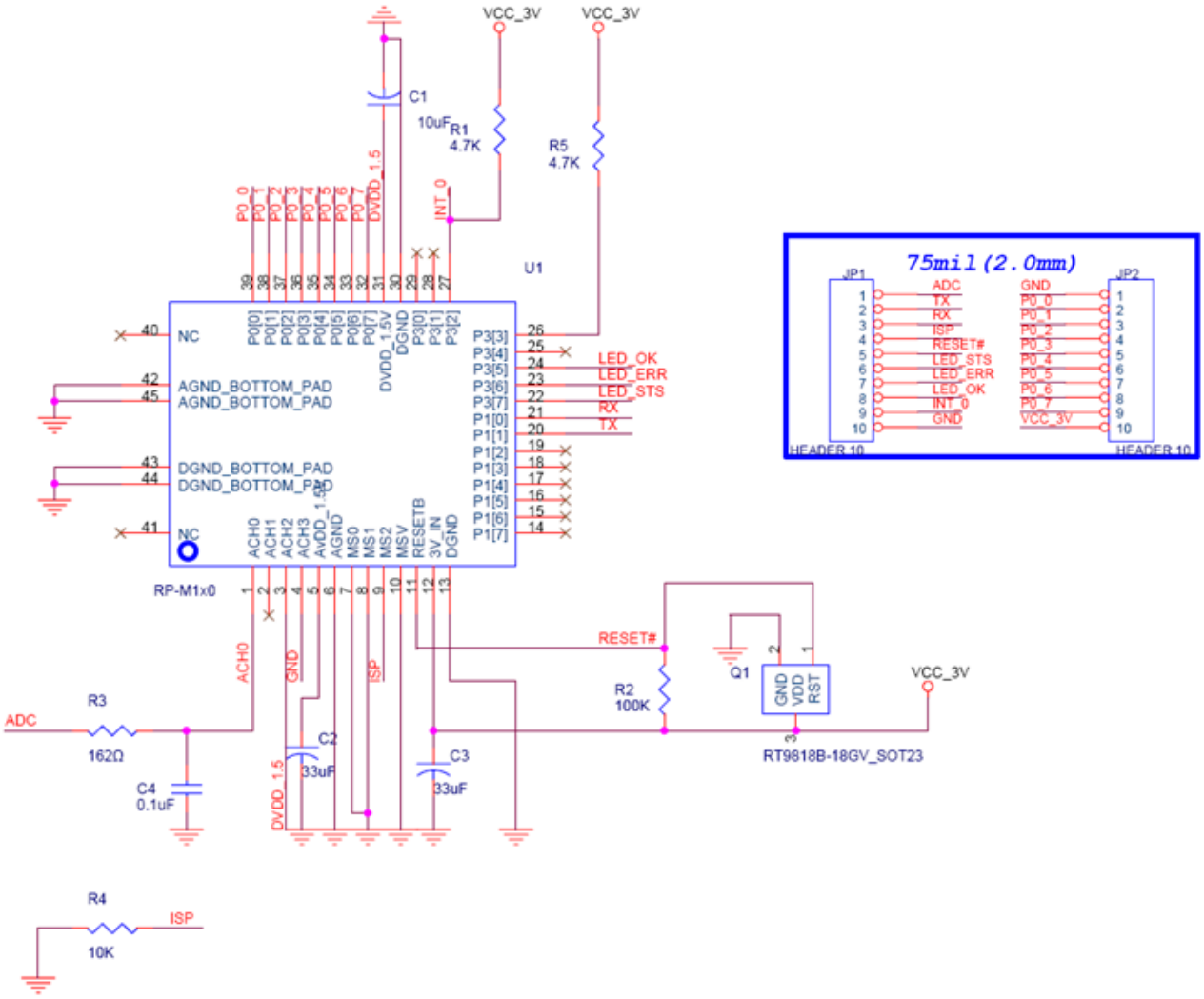
RP-M110 functions is the same as FZ760BS when you use it together with the Expansion Board after downloading the MAC firmware.

(3) Interface Board



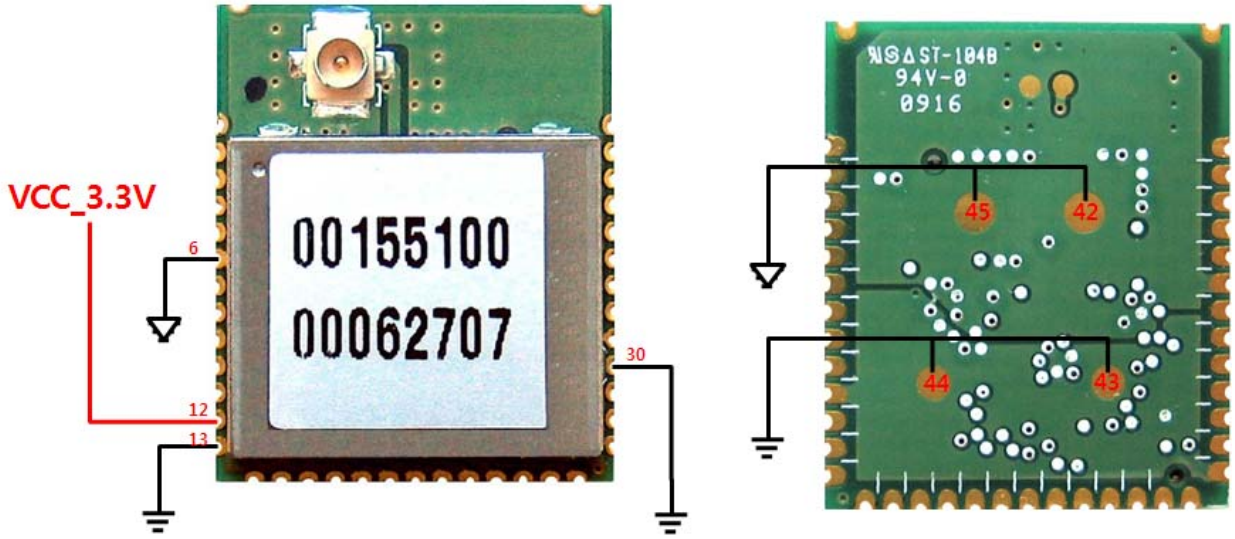
When you use the Expansion Board, you can check the operation status through the interface board.

Expansion Board Circuits



Reference Circuits

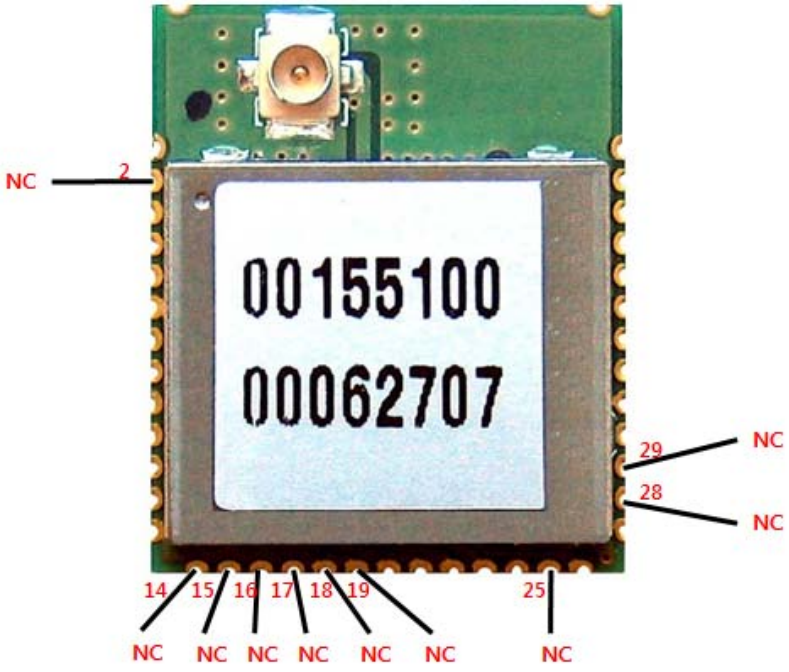
(1) The VCC and the GND Ports are connected as below.



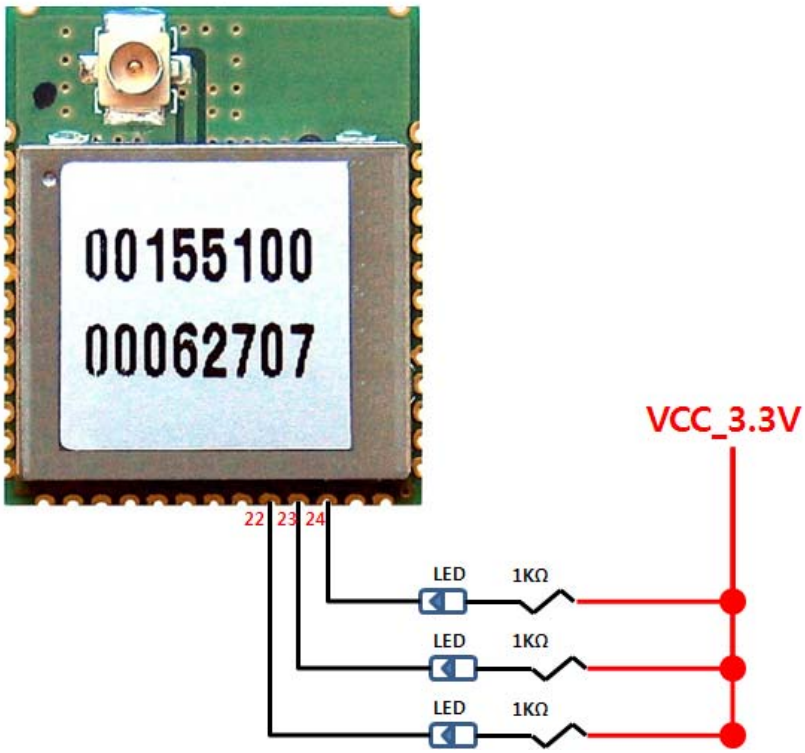
RP-M110 has separate Digital Ground(DGND) and Analog Ground(AGND).

Use DGND and AGND separately, if possible.

(2) The NC(None Connect) Ports are as below.



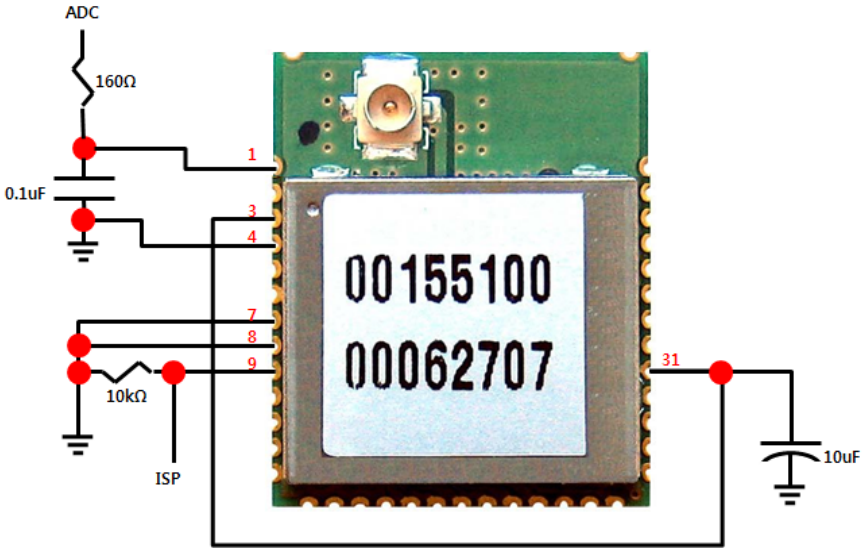
(3)The STATUS Ports are connected as below.



The Status/OK/ERROR Ports are in Active Low(0V) state.

The LED connected to the STATUS Port is ON when the port is in Low state.

(4) To use the ADC and the ISP ports, connections are as below.

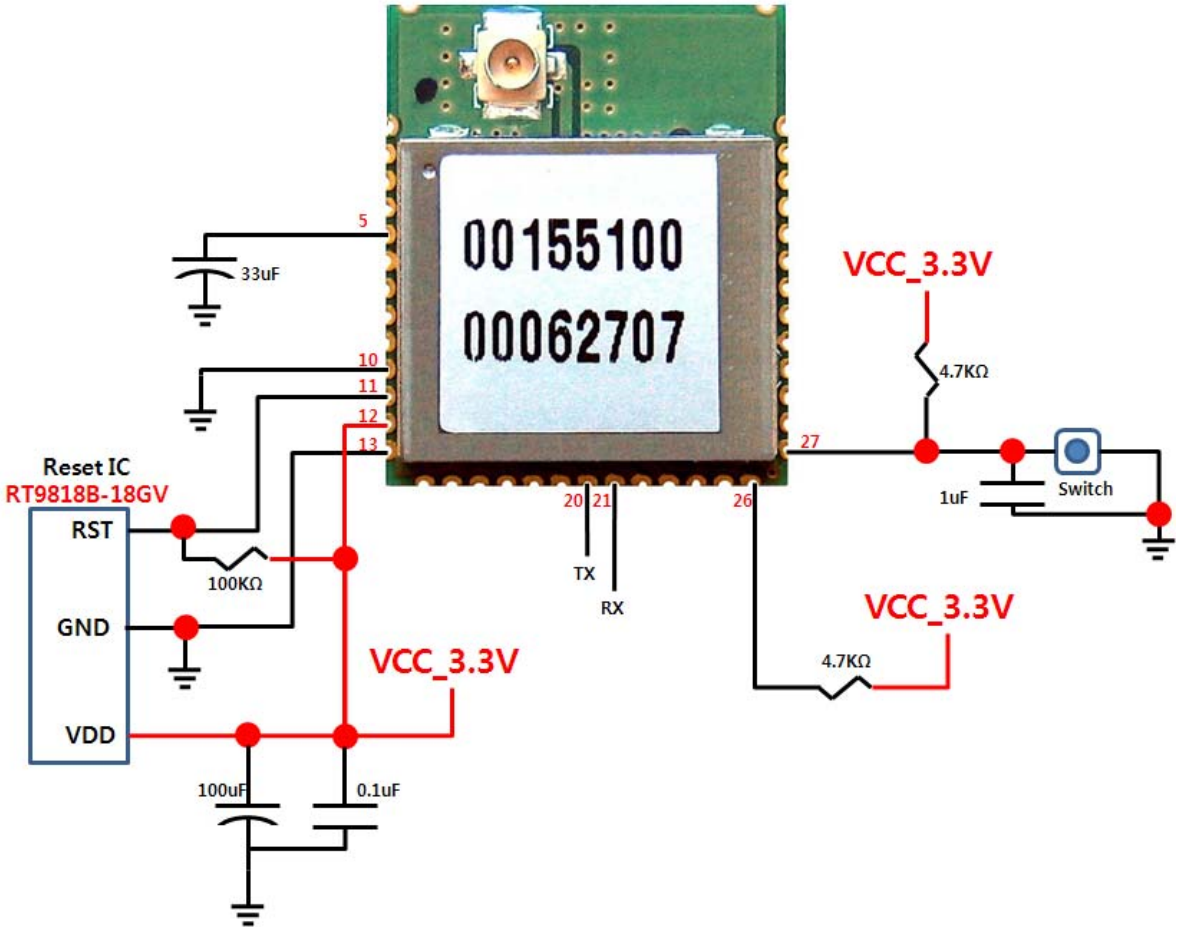


Analogue data with 0~1.5V is input into the ADC Port.

When High(3V) voltage signal is input into the ISP Port, the Download Mode is started.

When Low(0V) voltage signal is input into the ISP Port, the loaded firmware is started.

(5) The Reset and the INT(KEY), TX/RX Port are connected as below.

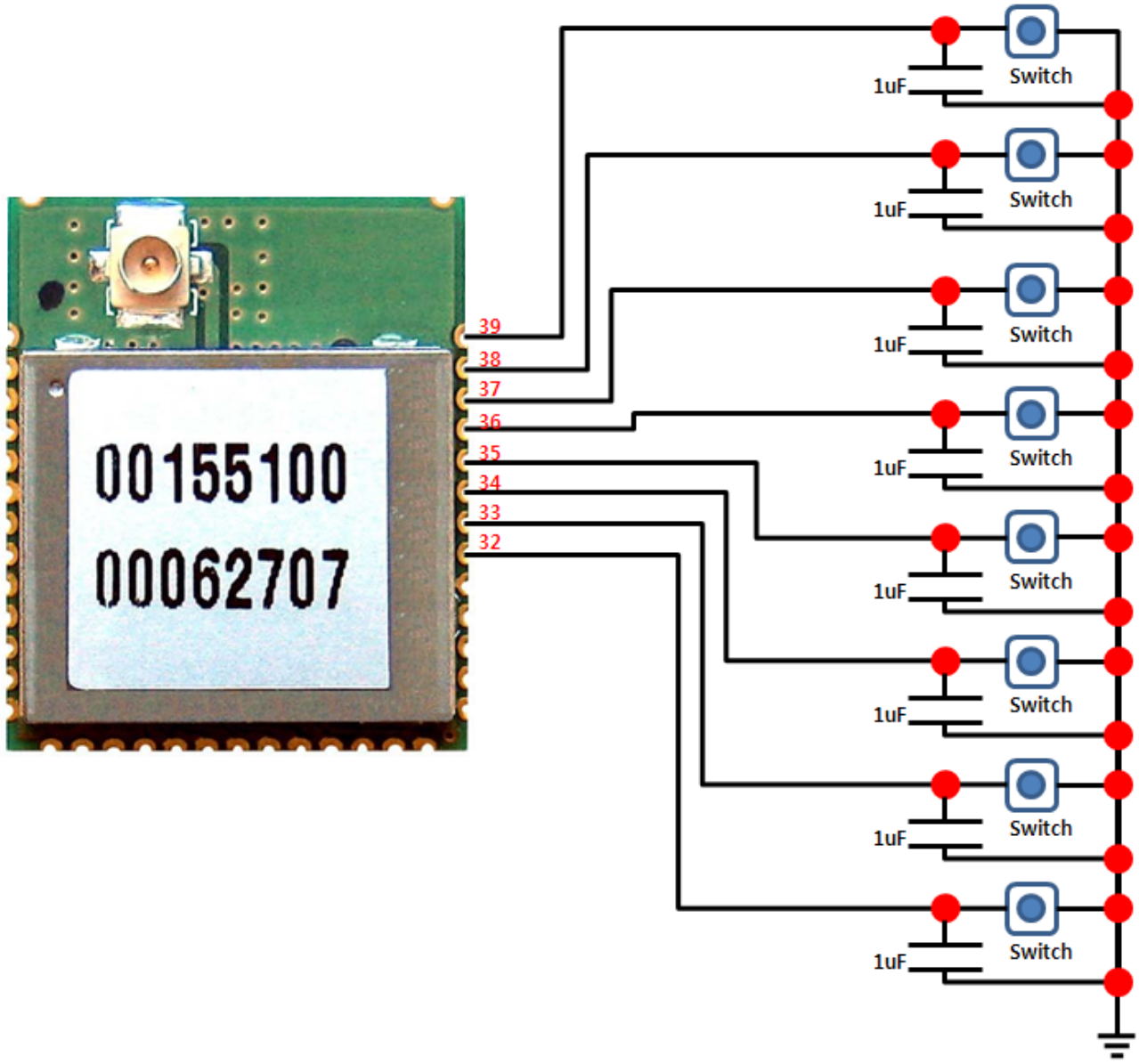


When the power is turned off by force during the operation of RP-M110, data inside the flash memory in the product can be erased due to the unstable voltage.

To eliminate this problem, an input voltage stabilization method and a Voltage Detector Reset IC are used.

When Low(0V) voltage signal is input into the INT(KEY) Port, it is recognized as an Interrupt Data(Switch).

(6) When you use the GPIO Ports as data input ports using the Stack version, connections are as below.

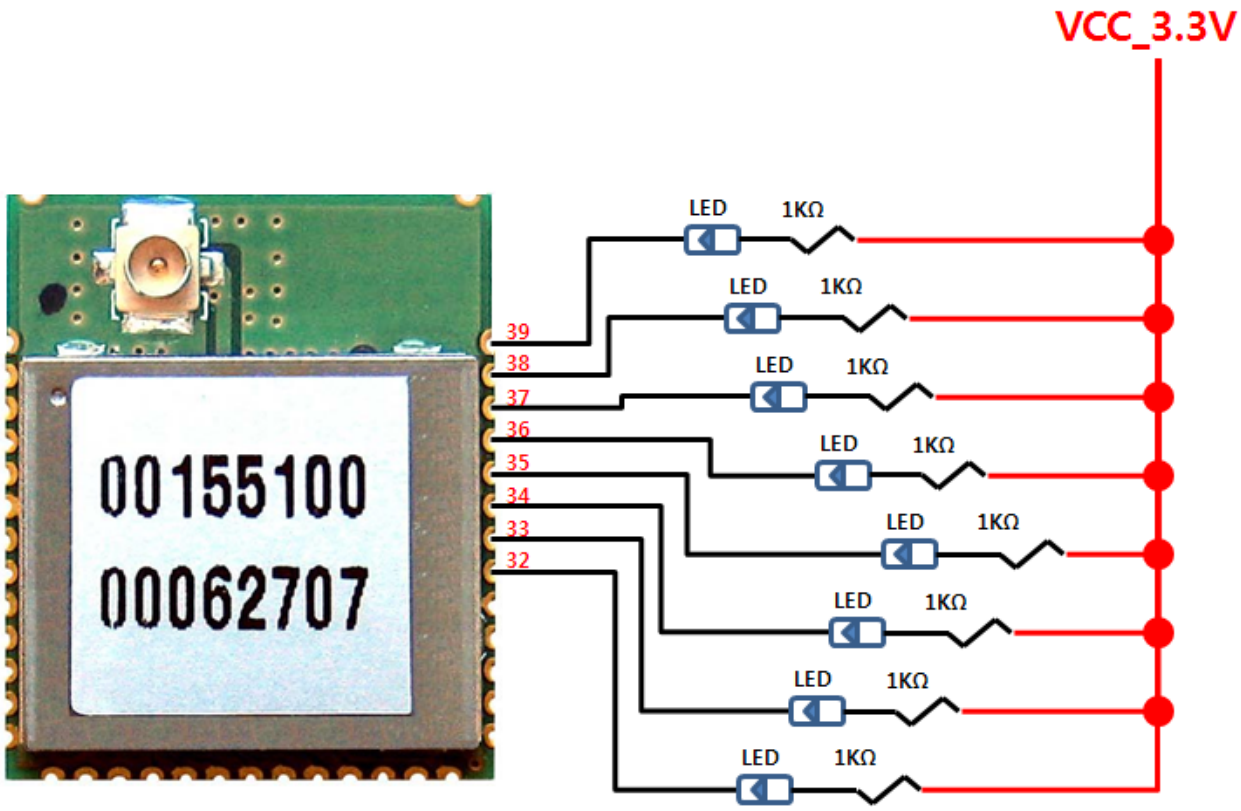


All eight GPIO Ports in the Stack version can be set only for one direction.

When you set the GPIO Ports as input ports in the Stack version, all eight ports operate as input ports.

When Low(0V) voltage signal is input into the GPIO Port, it is recognized as a data input.

(7) When you use the GPIO Ports as output ports in the Stack version, connections are as below.

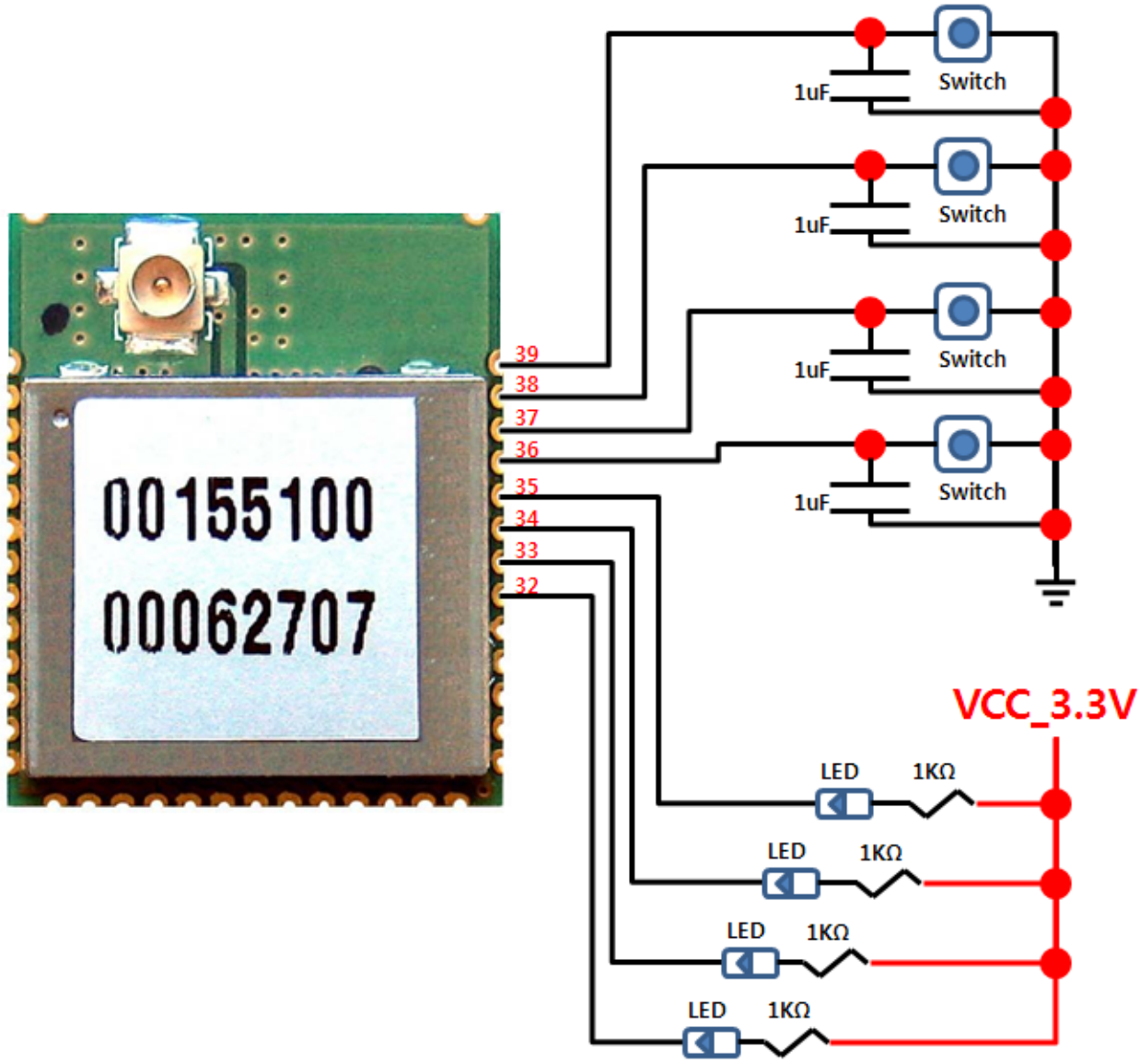


All eight GPIO Ports in the Stack version can be set only for one direction.

When you set the GPIO Ports as output ports in the Stack version, all eight ports operate as output ports.

When Low(0V) voltage signal is output from the GPIO Port, the LED is ON.

(8) When you use the GPIO Ports in the Mac version, connections are as below.



The GPIO Ports of the Mac version are preset as input and output ports.

Upper four bits (32 ~ 35) are preset as output ports and lower four bits (36 ~ 39) are preset as input ports.

※ Please refer to the hardware datasheet for hardware details of RP-M110.

※ Please refer to the FZ750/FZ760 manual for detail RP-M110 operation.