# Appendix\_4

FZ760\_Low Power Mode Details

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# ■ Table of Contents

1. LOW POWER MODE	3
2. LOW POWER MODE 0	4
2-1. Data Transmission in the Low Power Mode 0	4
2-1-1. Serial Data Transmission in the Low Power Mode 0	4
2-1-2. KEY Data Transmission in the Low Power Mode 0	4
2-1-3. GPIO Data Transmission in the Low Power Mode 0	4
2-1-4. ADC Data Transmission in the Low Power Mode 0	4
2-1-5. COUNT Data Transmission in the Low Power Mode 0	4
3. LOW POWER MODE 1	5
3-1. Data Transmission in the Low Power Mode 1	5
3-1-1. Serial Data Transmission in the Low Power Mode 1	5
3-1-2. KEY Data Transmission in the Low Power Mode 1	5
3-1-3. GPIO Data Transmission in the Low Power Mode 1	6
3-1-4. ADC Data Transmission in the Low Power Mode 1	6
3-1-5. COUNT Data Transmission in the Low Power Mode 1	6
4. LOW POWER MODE 2	7
4. LOW POWER MODE 2 4-1. Data Transmission in the Low Power Mode 2	<b>7</b> 7
<ul> <li>4. LOW POWER MODE 2</li> <li>4-1. DATA TRANSMISSION IN THE LOW POWER MODE 2</li> <li>4-1-1. Serial Data Transmission in the Low Power Mode 2</li> </ul>	<b>7</b> 7 7
<ul> <li>4. LOW POWER MODE 2</li></ul>	7 7 7
<ul> <li>4. LOW POWER MODE 2</li></ul>	7 7 7 8
<ul> <li>4. LOW POWER MODE 2</li> <li>4-1. DATA TRANSMISSION IN THE LOW POWER MODE 2</li></ul>	7 7 7 8 8
<ul> <li>4. LOW POWER MODE 2</li> <li>4-1. DATA TRANSMISSION IN THE LOW POWER MODE 2</li></ul>	7 7 7 8 8 8
<ul> <li>4. LOW POWER MODE 2</li> <li>4-1. DATA TRANSMISSION IN THE LOW POWER MODE 2</li></ul>	7 7 7 8 8 8 8
<ul> <li>4. LOW POWER MODE 2</li></ul>	7 7 7 8 8 8 9
<ul> <li>4. LOW POWER MODE 2</li></ul>	7 7 7 8 8 8 9 9
<ul> <li>4. LOW POWER MODE 2</li></ul>	7 7 7 8 8 8 9 9
<ul> <li>4. LOW POWER MODE 2</li></ul>	7 7 7 8 8 8 9 9
<ul> <li>4. LOW POWER MODE 2</li></ul>	7 7 7 8 8 9 9 9
<ul> <li>4. LOW POWER MODE 2</li></ul>	7 7 7 8 8 9 9 9

Low Power Mode means a power-saving mode for the device. In the Low Power Mode, the device does not operate and enters the Sleep Mode.

When the device is in the Low Power Mode, the device cannot receive data wirelessly.

To receive data wirelessly in the Low Power Mode, users must wake up the device.

When the device is in the Low Power Mode, the device cannot transmit data wirelessly.

To transmit data wirelessly in the Low Power Mode, users must wake up the device.

The wake-up method from the Low Power Mode differs depending on the type of the Low Power Mode.

The Low Power Mode of the device interacts with the Internal Time set inside the device (except for Low Power Mode 3).

There are four Low Power Modes for the device.

	Current Consumption		
Low Power Mode	Entering	Data	
	Level	Communication	
Low Power Mode 0	-	38mA	
Low Power Mode 1	25uA	-	
Low Power Mode 2	2uA	-	
Low Power Mode 3	1uA	-	

<Current Consumption of the Device>

In the Low Power Mode 0, the device does not enter the Low Power Mode.

When the device is not in the Low Power Mode, its power consumption is high and data can be received and transmitted smoothly.

The device receiving data wirelessly does not use the Low Power Mode.

## 2-1. Data Transmission in the Low Power Mode 0

For a device operating in the Low Power Mode 0, wireless data can be transmitted as soon as the data is input by the user.

Internal Time for the device operated in the Low Power Mode 0 can be set to up to 65000 seconds.

2-1-1. Serial Data Transmission in the Low Power Mode 0

In the device operated in the Low Power Mode 0, Serial data can be transmitted wirelessly as soon as the data is input to the UART port of the device by the user.

2-1-2. KEY Data Transmission in the Low Power Mode 0

In the device operated in the Low Power Mode 0, KEY data is transmitted wirelessly as soon as Low (0V) is input to the KEY port of the device.

In the Low Power Mode 0, KEY data is transmitted when it is input regardless of the KEY Option.

2-1-3. GPIO Data Transmission in the Low Power Mode 0

In the device operated in the Low Power Mode 0, GPIO data is transmitted wirelessly as soon as Low (0V) is input to the GPIO port of the device (GPIO Option 0).

2-1-4. ADC Data Transmission in the Low Power Mode 0

In the device operated in the Low Power Mode 0, ADC data is transmitted wirelessly by the set Internal Time (when the ADC data transmission function is enabled).

2-1-5. COUNT Data Transmission in the Low Power Mode 0

In the device operated in the Low Power Mode 0, COUNT data is transmitted wirelessly by the set Internal Time (when the ADC and COUNT data transmission functions are enabled).

In the Low Power Mode 1, the device enters the Low Power Mode if no data is input by the user for a certain time (about 1 second) or no data is input by the user for a certain time (about 30seconds) after wireless data transmission.

When the device enters the Low Power Mode 1, its current consumption is low. But users have to wake up the device to receive or send data wirelessly.

The device receiving data wirelessly does not use the Low Power Mode.

## 3-1. Data Transmission in the Low Power Mode 1

Users have to wake up the device in the Low Power Mode 1 to input user data.

The device in the Low Power Mode wakes up when KEY data is input or it comes to the set Internal Time or it is reset from the Low Power Mode.

Internal Time for the device operated in the Low Power Mode 1 can be set to up to 255 seconds. When the device wakes up from the Low Power Mode 1, it directly enters the Operating Mode without requiring a reset (except for the forced reset).

## 3-1-1. Serial Data Transmission in the Low Power Mode 1

The device in the Low Power Mode 1 wakes up when Low (0V) is input to the KEY port of the device and High (3.3V) input follows. Serial data is transmitted wirelessly when it is input to the UART port of the device after the device wakes up.

(If the KEY Option is set to Disable, the device wakes up only when KEY data is input.)

The device in the Low Power Mode 1 wakes up by the set Internal Time of the device after it enters the Low Power Mode. Serial data is transmitted wirelessly when it is input to the UART port of the device after the device wakes up.

#### 3-1-2. KEY Data Transmission in the Low Power Mode 1

The device in the Low Power Mode 1 wakes up when Low (0V) is input to the KEY port of the device and High (3.3V) input follows. If the KEY Option is set to Enable, the device wakes up and sends KEY data. The device in the Low Power Mode 1 wakes up and sends KEY data only once

The device in the Low Power Mode 1 does not send KEY data when it is input to the device after the device wakes up.

The device in the Low Power Mode 1 does not enter the mode again while Low (0V) is input to the KEY port.

#### FZ760\_Appendix\_4 VERSION 0.1.0

3-1-3. GPIO Data Transmission in the Low Power Mode 1

The device in the Low Power Mode 1 wakes up when Low (0V) is input to the KEY port of the device and High (3.3V) input follows. The device sends GPIO data wirelessly when Low (0V) is input to the GPIO port (GPIO Option 0) after it wakes up.

(If the KEY Option is set to Disable, the device wakes up only when KEY data is input.)

The device in the Low Power Mode 1 wakes up by the set Internal Time of the device after it enters the Low Power Mode. The device sends GPIO data wirelessly when Low (0V) is input to the GPIO port (GPIO Option 0) after it wakes up.

3-1-4. ADC Data Transmission in the Low Power Mode 1

The device in the Low Power Mode 1 wakes up when Low (0V) is input to the KEY port of the device and High (3.3V) input follows. The device sends ADC data wirelessly after it wakes up if the ADC data transmission function is enabled.

(If the KEY Option is set to Disable, the device only wakes up when KEY data is input.)

The device in the Low Power Mode 1 wakes up by the set Internal Time of the device after it enters the Low Power Mode. The device sends ADC data wirelessly after it wakes up if the ADC data Transmission function is enabled.

3-1-5. COUNT Data Transmission in the Low Power Mode 1

The device the Low Power Mode 1 wakes up when Low (0V) is input to the KEY port of the device and High (3.3V) input follows. The device sends COUNT data wirelessly after it wakes up if the ADC and COUNT data transmission functions are enabled.

(If the KEY Option is set to Disable, the device only wakes up when KEY data is input.)

The device in the Low Power Mode 1 wakes up by the set Internal Time of the device after it enters the Low Power Mode. The device sends COUNT data wirelessly after it wakes up if the ADC and COUNT data transmission functions are enabled.

In the Low Power Mode 2, the device enters the Low Power Mode if no data is input by the user for a certain time (about 1 second) or no data is input by the user for a certain time (about 30seconds) after wireless data transmission.

When the device enters the Low Power Mode 2, its current consumption is low. But users have to wake up the device manually to receive or send data wirelessly.

The device receiving data wirelessly does not use the Low Power Mode.

## 4-1. Data Transmission in the Low Power Mode 2

Users have to wake up the device in the Low Power Mode 2 for data input.

The device in the Low Power Mode wakes up when KEY data is input or by set Internal Time or when it is reset from the Low Power Mode.

Internal Time for the device operated in the Low Power Mode 2 can be set to up to 255 seconds. The device is reset when it wakes up from the Low Power Mode 2.

4-1-1. Serial Data Transmission in the Low Power Mode 2

The device in the Low Power Mode 2 wakes up and resets itself when Low (0V) is input to the KEY port of the device. Serial data is transmitted wirelessly when it is input to the UART port of the device after the device wakes up and resets itself.

(If the KEY Option is set to Disable, the device only wakes up when KEY data is input.)

The device in the Low Power Mode 2 wakes up and is reset by the set Internal Time of the device after it enters the Low Power Mode. Serial data is transmitted wirelessly when it is input to the UART port of the device after the device wakes up and resets itself.

4-1-2. KEY Data Transmission in the Low Power Mode 2

The device in the Low Power Mode 2 wakes up and resets itself when Low (0V) is input to the KEY port of the device. Serial data is transmitted wirelessly when it is input to the UART port of the device after the device wakes up and resets itself.

If the KEY Option is set to Enable, the device sends KEY data when it wakes up and resets itself.

The device in the Low Power Mode 2 sends KEY data continuously while Low (0V) is input to the KEY port.

The device in the Low Power Mode 2 sends KEY data when KEY data input after it wakes up.

The device in the Low Power Mode 2 does not enter the mode again while Low (0V) is input to the KEY port.

## FZ760\_Appendix\_4 VERSION 0.1.0

4-1-3. GPIO Data Transmission in the Low Power Mode 2

The device in the Low Power Mode 2 wakes up and resets itself when Low (0V) is input to the KEY port of the device. GPIO data is transmitted wirelessly when Low (0V) is input to the GPIO port of the device (GPIO Option 0) after the device wakes up and resets itself.

(If the KEY Option is set to Disable, the device wakes up only when KEY data is input.)

The device in the Low Power Mode 2 wakes up and resets itself at the set Internal Time of the device after it enters the Low Power Mode. Serial data is transmitted wirelessly when Low (0V) is input to the GPIO port of the device (GPIO Option 0) after the device wakes up and resets itself.

4-1-4. ADC Data Transmission in the Low Power Mode 2

The device in the Low Power Mode 2 wakes up and resets itself when Low (0V) is input to the KEY port of the device. ADC data is transmitted wirelessly when the ADC data transmission function is enabled after the device wakes up and resets itself.

(If the KEY Option is set to Disable, the device wakes up only when KEY data is input.)

The device in the Low Power Mode 2 wakes up and resets itself by the set Internal Time of the device after it enters the Low Power Mode. ADC data is transmitted wirelessly when the ADC data transmission function is enabled after the device wakes up and resets itself.

4-1-5. COUNT Data Transmission in the Low Power Mode 2

The device in the Low Power Mode 2 wakes up and resets itself when Low (0V) is input to the KEY port of the device. COUNT data is transmitted wirelessly when the ADC and COUNT data transmission functions are enabled after the device wakes up and resets itself.

Only 0000 of COUNT data is transmitted since the device resets itself when it wakes up.

The device in the Low Power Mode 2 wakes up and resets itself by the set Internal Time of the device after it enters the Low Power Mode. COUNT data is transmitted wirelessly when the ADC and COUNT data transmission functions are enabled after the device wakes up and resets itself.

Only 0000 of COUNT data is transmitted since the device resets itself when it wakes up.

In the Low Power Mode 3, the device enters the Low Power Mode if no data is input by the user for a certain time (about 1 second) or no data is input by the user for a certain time (about 30seconds) after wireless data transmission.

When the device enters the Low Power Mode 3, its current consumption is low. But users have to wake up the device manually to receive or send data wirelessly.

The device receiving data wirelessly does not use the Low Power Mode.

## 5-1. Data Transmission in the Low Power Mode 3

Users have to wake up the device in the Low Power Mode 3 to input user data. The device in the Low Power Mode wakes up when KEY data is input or it is reset. The device in the Low Power Mode 3 does not wake up by the set Internal Time. The device is reset when it wakes up from the Low Power Mode 3.

5-1-1. Serial Data Transmission in the Low Power Mode 3

The device in the Low Power Mode 3 wakes up and resets itself when Low (0V) is input to the KEY port of the device. Serial data is transmitted wirelessly when it is input to the UART port of the device after the device wakes up and resets itself.

(If the KEY Option is set to Disable, the device only wakes up when KEY data is input.)

The device in the Low Power Mode 3 wakes up and resets itself at the set Internal Time of the device after it enters the Low Power Mode. Serial data is transmitted wirelessly when it is input to the UART port of the device after the device wakes up and resets itself.

(If the KEY Option is set to Disable, the device only wakes up when KEY data is input.)

## 5-1-2. KEY Data Transmission in the Low Power Mode 3

The device in the Low Power Mode 3 wakes up and resets itself when Low (OV) is input to the KEY port of the device. If the KEY Option is set to Enable, the device sends KEY data when it wakes up and resets itself.

The device in the Low Power Mode 3 sends KEY data continuously while Low (0V) is input to the KEY port.

The device in the Low Power Mode 3 sends KEY data when KEY data input after it wakes up.

The device in the Low Power Mode 3 does not enter the mode again while Low (0V) is input to the KEY port.

5-1-3. GPIO Data Transmission in the Low Power Mode 3

The device in the Low Power Mode 3 wakes up and resets itself when Low (0V) is input to the KEY port of the device. GPIO data is transmitted wirelessly when Low (0V) is input to the GPIO port of the device (GPIO Option 0) after the device wakes up and resets itself.

(If the KEY Option is set to Disable, the device only wakes up when KEY data is input.)

### 5-1-4. ADC Data Transmission in the Low Power Mode 3

The device in the Low Power Mode 3 wakes up and resets itself when Low (0V) is input to the KEY port of the device. ADC data is transmitted wirelessly when the ADC data transmission function is enabled after the device wakes up and resets itself.

(If the KEY Option is set to Disable, the device wakes up only when KEY data is input.)

5-1-5. COUNT Data Transmission in the Low Power Mode

The device in the Low Power Mode 3 wakes up and resets itself when Low (0V) is input to the KEY port of the device. COUNT data is transmitted wirelessly when the ADC and COUNT data transmission functions are enabled after the device wakes up and resets itself.

(If the KEY Option is set to Disable, the device only wakes up when KEY data is input.)

COUNT data of 0000 is transmitted since the device resets itself when it wakes up.

# 6. Output Format of Received Data

