

### 3.4 Axis remap

The device mounting position should not limit the data output of the BNO055 device. The axis of the device can be re-configured to the new reference axis.

Axis configuration byte: Register Address: **AXIS\_MAP\_CONFIG**

| Bit 7    | Bit 6 | Bit 5                 | Bit 4 | Bit 3                 | Bit 2 | Bit 1                 | Bit 0 |
|----------|-------|-----------------------|-------|-----------------------|-------|-----------------------|-------|
| Reserved |       | Remapped Z axis value |       | Remapped Y axis value |       | Remapped X axis value |       |

There are two bits are used to configure the axis remap which will define in the following way,

| Value | Axis Representation |
|-------|---------------------|
| 00    | X - Axis            |
| 01    | Y - Axis            |
| 10    | Z- Axis             |
| 11    | Invalid             |

Also, when user try to configure the same axis to two or more then BNO055 will take this as invalid condition and previous configuration will be restored in the register map. The default value is: X Axis = X, Y Axis = Y and Z Axis = Z (AXIS\_REMAP\_CONFIG = 0x24).

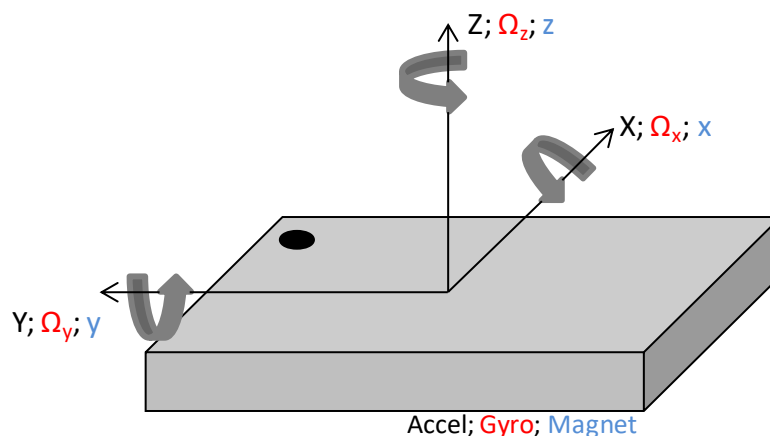
Axis sign configuration byte: Register Address: **AXIS\_MAP\_SIGN**

| Bit 7    | Bit 6 | Bit 5 | Bit 4 | Bit 3 | Bit 2                | Bit 1                | Bit 0                |
|----------|-------|-------|-------|-------|----------------------|----------------------|----------------------|
| Reserved |       |       |       |       | Remapped X axis sign | Remapped Y axis sign | Remapped Z axis sign |

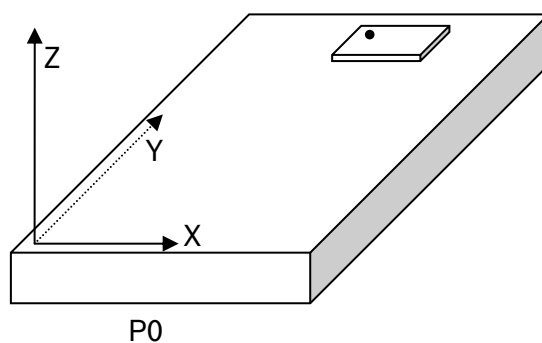
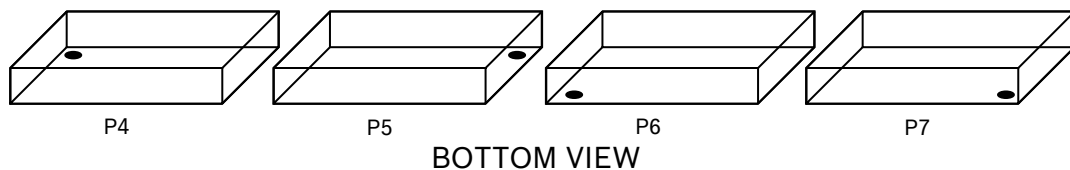
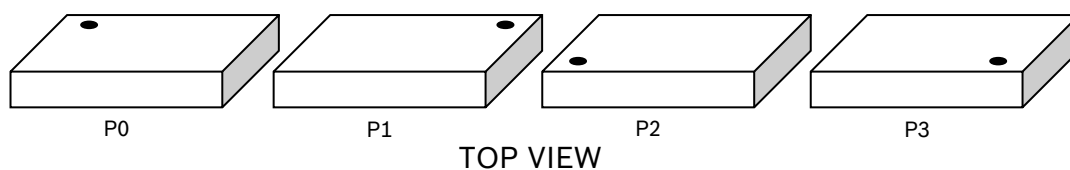
| Value | Sign     |
|-------|----------|
| 0     | Positive |
| 1     | Negative |

The default value is 0x00.

The default values correspond to the following coordinate system



Some example placement for axis vs. register settings:



For the above described placements, following would be the axis configuration parameters.

| Placement    | AXIS_REMAP_CONFIG | AXIS_REMAP_SIGN |
|--------------|-------------------|-----------------|
| P0           | 0x21              | 0x04            |
| P1 (default) | 0x24              | 0x00            |
| P2           | 0x24              | 0x06            |
| P3           | 0x21              | 0x02            |
| P4           | 0x24              | 0x03            |
| P5           | 0x21              | 0x01            |
| P6           | 0x21              | 0x07            |
| P7           | 0x24              | 0x05            |