

## ●Features

- Certificate with Japanese radio law.
- Conform to International Standard IEEE802.15.4g
- Low power consumption.  
At transmitting (1mW sending) 14mA  
(20mW sending) 40mA  
At receiving 18mA  
On sleep 3μA
- Transmission power : 1mW, 10mW, 20mW
- Package size : 34.7mm×22.0mm×3.5mm
- Interface : SPI, DIO
- Frequency band used : 920.6MHz to 928MHz  
(Under development (750 to 1000MHz)  
module for Sub-GHz overseas in the  
same type)
- Utilizes a Lapis Semiconductor (a ROHM  
Group company) IC, enabling complete  
support

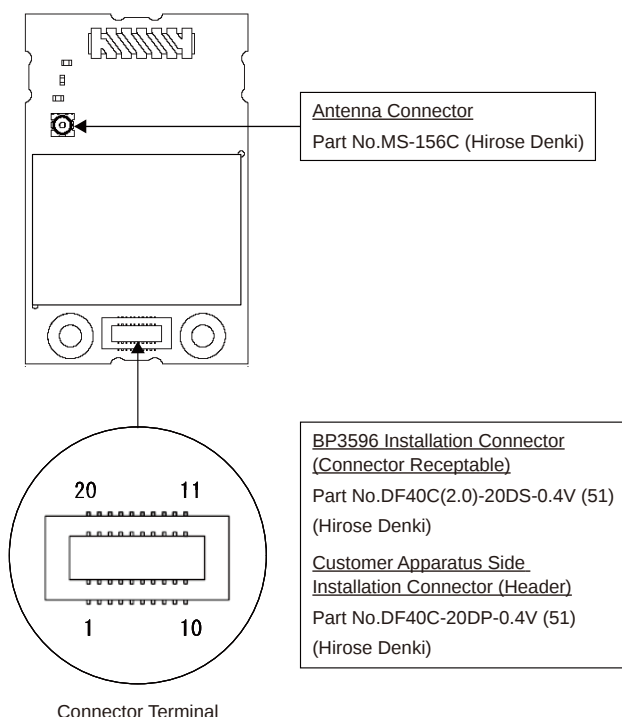
## ●Absolute Maximum Ratings

| Parameter                   | Symbol           | Limits                          | Unit | Remarks |
|-----------------------------|------------------|---------------------------------|------|---------|
| Power supply voltage        | V <sub>DD</sub>  | -0.3 to +3.6                    | V    | DC      |
| Digital input voltage       | V <sub>DIN</sub> | -0.3 to V <sub>DD</sub> to +0.3 | V    |         |
| Digital output voltage      | V <sub>DO</sub>  | -0.3 to V <sub>DD</sub> to +0.3 | V    |         |
| Digital input current       | I <sub>DI</sub>  | -10 to +10                      | mA   |         |
| Digital output current      | I <sub>DO</sub>  | -8 to +8                        | mA   |         |
| Operating temperature range | Topr             | -30 to +80                      | °C   |         |
| Storage temperature range   | Tstg             | -30 to +80                      | °C   |         |

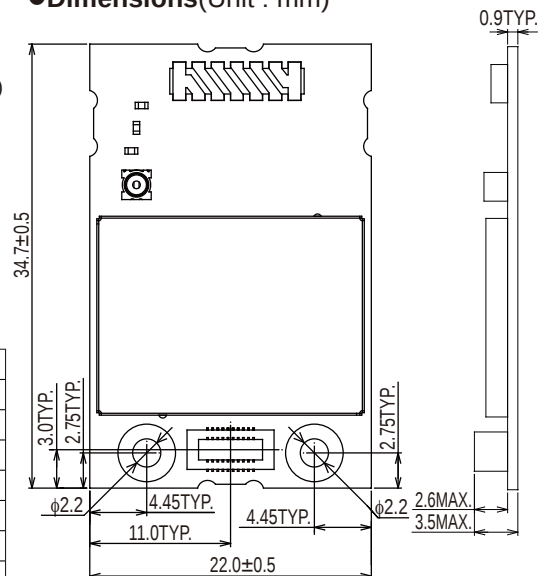
## ●Specification

|                                                                       |                                                                                                 |
|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Wireless standard                                                     | It is based on ARIB STD-T108                                                                    |
| Frequency band used                                                   | 920.6 to 928 MHz                                                                                |
| Modulation method                                                     | 2 value GFSK                                                                                    |
| Data rate                                                             | 100kbps (NRZ symbol)<br>In case of machester symbol is 1/2                                      |
| Tx power                                                              | 1mW, 10mW, 20mW                                                                                 |
| Rx sensitivity                                                        | -103dBm (TYP.) (100kbps, BER<0.1%)                                                              |
| Frequency tolerance                                                   | ±20ppm or less                                                                                  |
| Consumption current<br>(V <sub>DD</sub> =3.0V)<br>(data rate 100kbps) | At transmitting : 14mA, 40mA (1mW/20mW)<br>At receiving : 18mA<br>On sleep : 3μA                |
| HOST interface                                                        | Synchronous serial peripheral interface(SPI)<br>Sending and Receiving data-Interface(DIO, DCLK) |

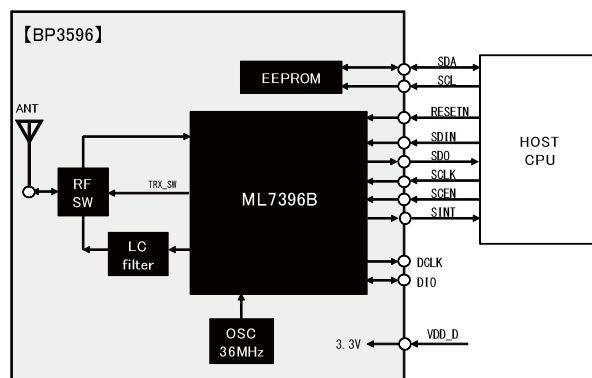
## ●Terminal Table



## ●Dimensions(Unit : mm)



## ●Block Chart



| No. | Terminal Name | I/O at reset | I/O | Active Level | Functions                                                                                                                             |
|-----|---------------|--------------|-----|--------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 1   | SCL           | -            | I   | -            | EEPROM Serial clock                                                                                                                   |
| 2   | SDA           | -            | I/O | -            | EEPROM sending / receiving serial data                                                                                                |
| 3   | GND           | -            | -   | -            | Ground                                                                                                                                |
| 4   | GND           | -            | -   | -            | Ground                                                                                                                                |
| 5   | GND           | -            | -   | -            | Ground                                                                                                                                |
| 6   | GND           | -            | -   | -            | Ground                                                                                                                                |
| 7   | AVDD_MON      | -            | -   | -            | Regulator monitor terminal                                                                                                            |
| 8   | VDD           | -            | -   | -            | Power supply 3V                                                                                                                       |
| 9   | VDD           | -            | -   | -            | Power supply 3V                                                                                                                       |
| 10  | N.C.          | -            | -   | -            | None connection                                                                                                                       |
| 11  | RESETN        | I            | Is  | L            | "Reset<br>L : RESET, H : Normal"                                                                                                      |
| 12  | SDO           | O/L          | O   | H or L       | sending SPI date                                                                                                                      |
| 13  | SINTN         | O/H          | O   | L            | "receiving SPI Interrupt<br>L : notify, H : not notify"                                                                               |
| 14  | SCLK          | I            | Is  | -            | receiving SPI clock                                                                                                                   |
| 15  | SCEN          | I            | Is  | L            | SPI chip enable<br>L : enable, H : disable                                                                                            |
| 16  | SDI           | I            | Is  | H or L       | receiving SPI date                                                                                                                    |
| 17  | DIO           | -            | I/O | -            | data Input / Output terminal                                                                                                          |
| 18  | DCLK          | O            | O   | -            | data clock                                                                                                                            |
| 19  | D_MON         | O            | O   | H            | Digital monitor terminal<br>Function1 : (output clock (6MHz))<br>Function2 : output PLL Lock signal<br>Function : Output FIFO trigger |
| 20  | A_MON         | Hi-Z         | ORF | -            | Analog monitor terminal                                                                                                               |

\* I/O Definition ORF : RF Output Terminal, I : Digital Input Terminal,  
O : Digital Output Terminal, Is : Schmitt Trigger Input Terminal

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