ARIB STD-T108 standard
Low Power Sub-1GHz Radio Module
BP3596　　　　　　　　　　　　　　　　　　　　　　　　Datasheet

ROHM SEMICONDUCTOR

●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

●Dimensions(Unit : mm)

●Absolute Maximum Ratings

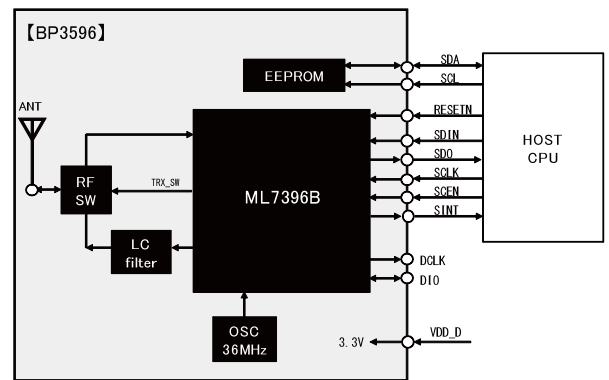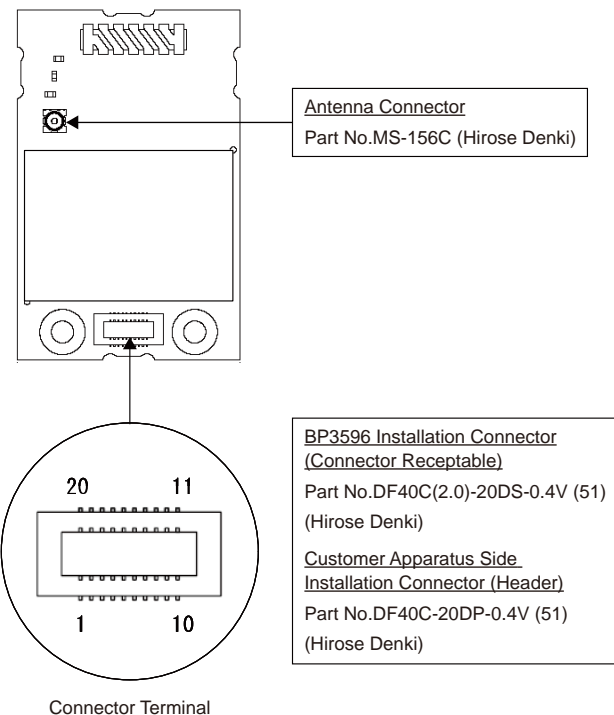| Parameter	Symbol	Limits	Unit	Remarks
Power supply voltage	V_{DD}	–0.3 to +3.6	V	DC
Digital input voltage	V_{DIN}	–0.3 to V_{DD} to +0.3	V	
Digital output voltage	V_{DO}	–0.3 to V_{DD} to +0.3	V	
Digital input current	I_{DI}	–10 to +10	mA	
Digital ouput current	I_{DO}	–8 to +8	mA	
Operating temperature range	Topr	–30 to +80	°C	
Storage temperature range	Tstg	–30 to +80	°C	
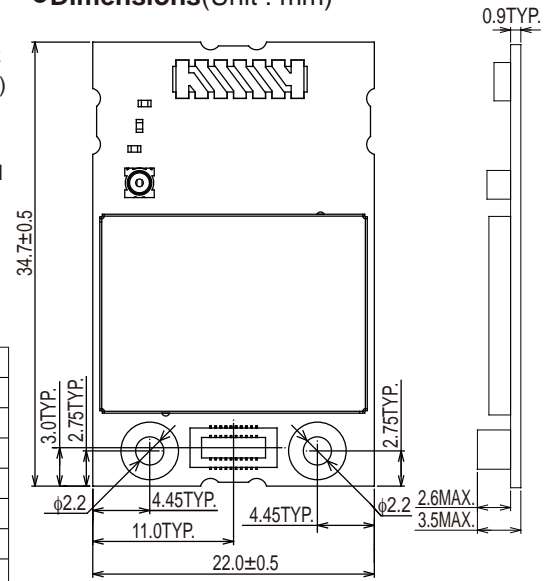
●Specification

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) 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 (V_{DD}=3.0V) (data rate 100kbps)	At transmitting : 14mA, 40mA (1mW/20mW) At receiving : 18mA On sleep : 3μA
HOST interface	Synchronous serial peripheral interface(SPI) Sending and Receiving data·Interface(DIO, DCLK)

●Block Chart

●Terminal Table

Antenna Connector
Part No.MS-156C (Hirose Denki)

BP3596 Installation Connector
(Connector Receptable)
Part No.DF40C(2.0)-20DS-0.4V (51)
(Hirose Denki)

Customer Apparatus Side
Installation Connector (Header)
Part No.DF40C-20DP-0.4V (51)
(Hirose Denki)

Connector Terminal

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 L : RESET, H : Normal"
12	SDO	O/L	O	H or L	sending SPI date
13	SINTN	O/H	O	L	"receiving SPI Interrupt L : notify, H : not notify"
14	SCLK	I	Is	–	receiving SPI clock
15	SCEN	I	Is	L	SPI chip enable 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 Function1 : (output clock (6MHz)) Function2 : output PLL Lock signal 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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Notes

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