

# **Bluetooth Module: BT11B**

## **User Manual**

# 1 GENERAL

## 1-1 Purpose and Scope of this document

This document contains the specifications pertinent to the module for Bluetooth™ system, which comply with BLUETOOTH™ Specifications Version 2.1 + EDR.

This document describes General, Mechanical, Electrical, Software and Reliability specifications and aspects for Panasonic Bluetooth Module BT11B.

The radio module is manufactured by Alps Electric Co., Ltd. The Alps's original model name of this radio module is UGNZ4.

## 1-2 Standard Operating Condition

In case of VCC = 1.8V Operation

Items	Conditions
Operating Temperature	Nominal: +15°C to +35°C Extreme: -20°C to +75°C
Storage Temperature	-30°C to +85 °C
Supply Voltage ; VCC, VDD18V	Nominal: +1.8 V Extreme: +1.8 V ± 0.05 V
Supply Voltage For I/O; VCC_IO (UART)	Nominal: +1.8 to +3.3V <sup>*1)</sup> Extreme: Nominal ± 0.1 V
Supply Voltage For I/O; VCC_IO (USB)	Nominal: +3.3V Extreme: Nominal ± 0.1 V
Absolute Maximum Ratings Supply Voltage	VCC : -0.4V ~ +3.5V VCC_IO : -0.4V ~ +3.5V

\*1) Depend on Host I/F voltage

In case of VCC: 3.3V Operation

Items	Conditions
Operating Temperature	Nominal: +15°C to +35°C Extreme: -20°C to +75°C
Storage Temperature	-30°C to +85 °C
Supply Voltage ; VCC, VDD18V	Nominal: +3.3 V Extreme: +3.3 V ± 0.05 V
Supply Voltage For I/O; VCC_IO (UART)	Nominal: +1.8 to +3.3V <sup>*1)</sup> Extreme: Nominal ± 0.1 V
Supply Voltage For I/O; VCC_IO (USB)	Nominal: +3.3V Extreme: Nominal ± 0.1 V
Absolute Maximum Ratings Supply Voltage	VCC : -0.4V ~ +3.5V VCC_IO : -0.4V ~ +3.5V

\*1) Depend on Host I/F voltage

### 1-3 Specification

Operating Frequency	2402 MHz to 2480 MHz
Carrier Spacing	1.0 MHz
Channel	79
Duplexing	TDD
Symbol Rate	1Mbps (GFSK) 2Mbps ( $\pi/4$ -DQPSK) 3Mbps (8DPSK)
Modulation Method	GFSK BbT = 0.5 $\pi/4$ -DQPSK 8DPSK
Reference Oscillator	26MHz (built in)
RF input and output impedance	Nominal 50 ohm

## **Regulatory Information**

### **USA-Federal Communications Commission (FCC)**

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

### **Caution**

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### **Labeling**

System integrators must include the FCC ID on the end product.

### **Caution: Exposure to Radio Frequency Radiation.**

To comply with FCC/IC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

### **Canada-Industry Canada (IC)**

This device complies with RSS 210 of Industry Canada.

Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of this device.

L' utilisation de ce dispositif est autorisée seulement aux conditions suivantes :

- (1) il ne doit pas produire de brouillage et
- (2) l' utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

**Caution: Exposure to Radio Frequency Radiation.**

To comply with RSS 102 RF exposure compliance requirements, for mobile configurations, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

**Labeling**

System integrators must include the IC ID on the end product.

**Instructions to System integrators**

A User manual provided to the end user must indicate the operating requirements and conditions that must be observed to ensure compliance with the above-mentioned FCC /IC RF Exposure guideline.

If this module is intended for use in a portable device, integrators are responsible for separate evaluation and/or approval to satisfy FCC/IC RF Exposure requirements.

If other radio devices are to be integrated with this module, an additional evaluation and FCC/IC submission may be required. Integrators are responsible for such additional evaluation and FCC/IC submission.