

# User Guide Information

## ALPS Bluetooth™ Transceiver Module Model UGPZ8

**Caution: This user guide information is only provided to OEM or module installer.  
Do not supply to the end user.**

### 1. Introduction:

The ALPS, UGPZ8 with Bluetooth™ wireless technology is a radio device that transmits and receives radio signals in accordance with the spectrum regulations for the 2.4 GHz unlicensed frequency range. The following table shows a major function.

The UGPZ8 complies with the Bluetooth™ specification Version 2.0+EDR (Enhanced Data Rate) issued by Bluetooth-SIG.

The EDR (Enhanced Data Rate), uses PSK modulation and has two variants:  $\pi/4$ -DQPSK and 8DPSK. The gross air data rate is 1 Mbps for Basic Rate using GFSK, 2 Mbps for EDR using  $\pi/4$ -DQPSK and 3 Mbps for EDR using 8DPSK.

Model No.	Major Function	Remarks
UGPZ8	1. Output Power; Bluetooth™ class 2. 2.5mW (+4dBm) Max. 2. Internal metal antenna provided 3. Voltage regulator built in. 4. Rating of Input voltage: +3.3Vdc, +/-0.1V 5. Modulation Basic Rate : GFSK(1Mbps), Enhanced Data Rate: $\pi/4$ -DQPSK(2Mbps), 8DPSK(3Mbps) 6. Reference oscillator built in 7. SIM style connection through USB interfaces, V1.1 8. Operating temperature: Nominal; +15 °C to +35 °C 9. Regulatory frequency range USA, Canada, Europe, Taiwan, Korea, China and Japan: 2400 – 2483.5MHz	

Electrical features	Contents
ROM	4Mbit
RAM	48kbyte
Reference oscillator	Built in
Sub clock oscillator	Built in
USB interface	USB (V1.1) : OHCI and UHCI

Bluetooth™ Transceiver Module, model UGPZ8 has fully integrated 2.4GHz radio transceiver with Class2 power, receiver and frequency-hopping synthesizer.

The frequency range is “2400 – 2483.5MHz” and the channel number is defined from “0” (2402MHz) to “78” (2480MHz).

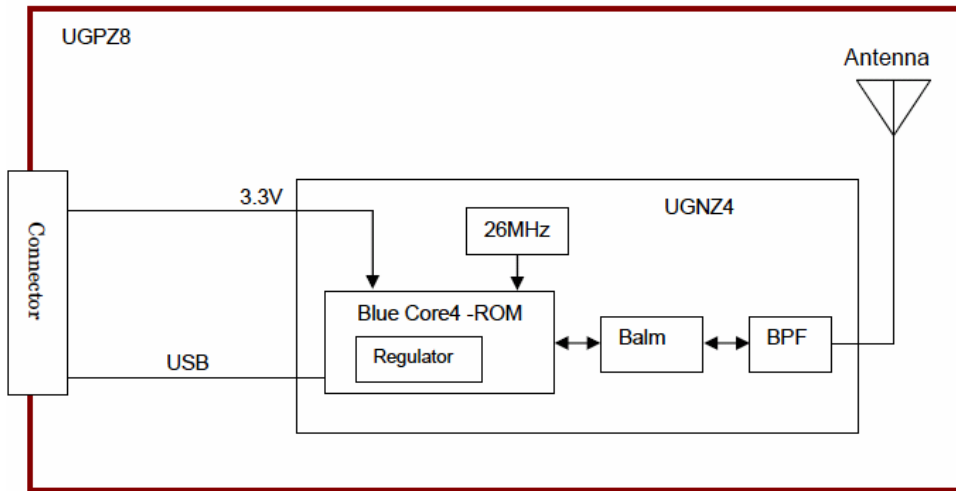
Total channel numbers are “79” and the RF channels are spaced 1 MHz.

Then, UGPZ8 has provision of Adaptive Frequency Hopping (AFH) that is used to improve the performance of physical links in the presence of interference as well as reducing the interference caused by physical links on other devices in the ISM band. AFH shall only be used during the connection state.

In order to facilitate power management, each section of the radio may be powered up and down separately.

## 2. Block Diagrams

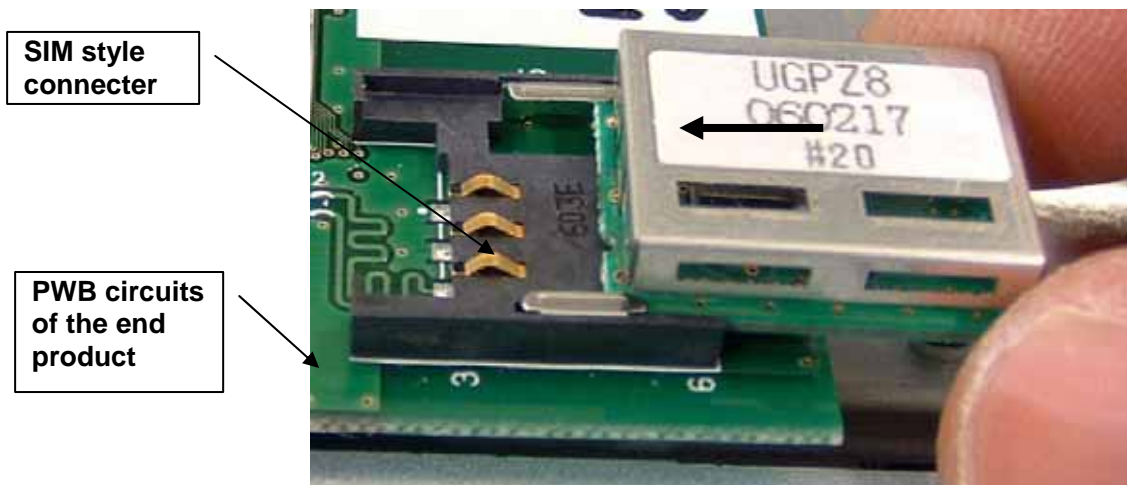
The following is a block diagram for UGPZ8.



## 3. Connection to end product

To connect the UGPZ8 module to the end product, SIM style connector is required on the PWB circuits of the end product as shown in the following photograph.

Please ask ALPS for the detail of an arrangement for installation.



#### 4. Eligibility requirements for regulatory approval:

As a part of regulatory certification, ALPS will provide an approval for certain countries in the form of modular approval (MA) .

The regulatory approval is required for each country throughout world where the end-user wishes to use ALPS UGPZ8 into entire end product, if no certification program for the modular approval exists in the country. The countries that can accept MA include the USA, Canada, certain European countries and others.

The conditions for approval of ALPS UGPZ8 and related information for each country are described below.

ALPS wishes that our customer for end product would contact with us about what module of UGPZ8 has been certified for each country.

#### 5.1 USA

##### 5.1.1 Compliance statement to FCC

This module complies with part 15 of the FCC rules. Operation is subject to the following 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.

##### 5.1.2 RF exposure compliance

This module may be installed into any end product in mobile device applications.

For Mobile Configuration, this module complies with FCC radiation exposure limits set forth for uncontrolled equipment and meets the FCC radio frequency (RF) Exposure Guidelines in Supplement C to OET65.

This module has very low levels of RF energy that it deemed to comply without maximum permissive exposure evaluation (MPE).

But it is desirable that it should be installed and operated with at least 20cm and more between the radiator and person's body (excluding extremities: hands, wrists, feet and legs).

##### 5.1.3 Requirements to end product

The following provisions for end product will be required on the FCC regulation, part 15.

###### (1) Antenna

The UGPZ8 module provides own internal metal antenna.

ALPS wishes that our customer shall use the module without any modifications including antenna.

If customer use a unique antenna, the FCC certification is required for the end product.

###### (2) Co-location.

This UGPZ8 module must not be co-located or operated in conjunction with any other antenna or transmitter.

###### (3) Markings

To satisfy FCC exterior labeling requirements, the following text must be placed on the exterior of the end product.

**Contains Transmitter Module FCC ID: CWTUGPZ8**

Any similar wording that expresses the same meaning may be used.

###### (4) Caution to user for modification

The following caution is expressed on the user's instruction manual of the end product.

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

(5) Compliance statement to FCC

The following statement is expressed on the user's instruction manual of the end product.

**This module complies with part 15 of the FCC rules. Operation is subject to the following 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.**

## 5.2 Canada

In general, I.C (Industry Canada) follows the FCC in terms of emission levels and other regulatory requirements.

### 5.2.1 Compliance statement for IC

This device complies with Industry Canada RSS-210. Operation is subject to the following 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.

### 5.2.2 RF exposure compliance

(1) This module may be installed into any end product in mobile device applications.

Because the module only radiates very low power level, it complies with RF exposure requirements.

(2) The installer of this device must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada's website [www.hc-sc.gc.ca/rpb](http://www.hc-sc.gc.ca/rpb).

### 5.2.3 Meaning of certification number

The meaning of the marking of "IC:1788F-UGPZ8" on the UGPZ module means:

"1788F-UGPZ8" is the certification number, and the term "IC" before the equipment certification number only signifies that Industry Canada technical specifications were met.

### 5.2.4 Requirements to end product

The following provisions for end product will be required on the Canada regulation.

#### (1) Antenna

The UGPZ8 module provides own internal metal antenna.

ALPS wishes that our customer shall use the module without any modifications including antenna.

If customer use a unique antenna, the I.C (Industry Canada) certification is required for the end product.

#### (2) Co-location.

This UGPZ8 module must not be co-located or operated in conjunction with any other antenna or transmitter.

#### (3) Markings

To satisfy Industry Canada exterior labeling requirements, the following text must be placed on the exterior of the end product.

**Contains Transmitter Module IC: 1788F- UGPZ8**

Any similar wording that expresses the same meaning may be used.

### 5.3 Europe

The UGPZ8 module with CE marking will assist our customer into advance.

However, our customer will be finally required to comply with the requirements of R&TTE directive for the end product integrating UGPZ8 module, even if UGPZ8 module has the CE marking.

If our customer of the end product is in doubt, then the end product integrating the UGPZ8 module must be assessed against Article 3.2 of the R&TTE Directive.

Note: The our customer for the end product containing UGPZ8 module without CE marking shall be required further application to R&TTE directive.

#### **CAUTION**

**1. The BLUETOOTH trademarks are owned by Bluetooth SIG, Inc., U.S.A.**