

User Guide Information to 2.4GHz ALPS Bluetooth™ Module Model UGPZ6

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

1. Introduction:

The ALPS, UGPZ6 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.

Model No.	Major Function	Remarks
UGPZ6	1. Output Power; Bluetooth™ class 2. 2.5mW (+4dBm) Max. 2. External 4 different antennas connected via antenna connector. 3. Voltage regulator built in. Rating of Input voltage: +3.3Vdc, +/-0.2V 4. Flash memory (8M bytes) built in 5. Reference oscillator built in 6. Board to board connection through USB interfaces, V2.0 7. Operating temperature: Nominal; +15 °C to +35 °C 8. Regulatory frequency range USA, Canada, Europe, Taiwan, Korea, China and Japan: 2400 – 2483.5MHz	There kinds of External antenna

Electrical features	Contents
Program memory	8M bits (256k bytes x 32 bits) Flash memory
RAM	32k bytes x 16 bits
Reference oscillator	Built in
Sub clock oscillator	Built in
USB interface	USB (V2.0) : OHCI and UHCI

2. Radio part

Bluetooth™ Transceiver Module, model UGPZ6 has fully integrated 2.4GHz radio transceiver with Class2 power, receiver and frequency-hopping synthesizer.

Then, UGPZ6 has also 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. Various software controllable switches have been implemented to control power to the transmitter, the frequency synthesizer/VCO, the receiver and the LNA, if provided.

3. Base band part

Bluetooth™ Module contains link controller, which performs all the real-time functions of the Bluetooth™ baseband protocol layer, including data transfer and connection management. The device also controls states of operation enables sniff, park and hold modes of operation. Real-time functions such as frequency-hopping burst timing and clock synchronization are also implemented in this hardware. Further processing is required to format the data into the Bluetooth™ packet format before it may be applied to the GFSK modulator. On the receive side the controller performs error correction and de-scrambling before de-packetizing the incoming payload and storing it in RX buffers.

The link controller hardware also implements the basic, repetitive actions of paging, inquiry, page or inquiry scans and the general Bluetooth™ modes of park and sniff. This ensures that the processor used to implement the Link Manager and other lower layer protocol can be kept inactive.

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 UGPZ6 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, and certain European countries.

The conditions for approval of ALPS UGPZ6 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 UGPZ6 has been certified for each country.

4.1 USA

4.1.1 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.

4.1.2 RF exposure compliance

This module may be installed into any end product in both mobile and portable 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).

For Portable 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 is deemed to comply without testing of specific Absorption ratio (SAR).

4.1.3 Requirements to end product

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

(1) Antenna

ALPS wishes that our customer shall use the UGPZ6 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 UGPZ6 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: CWTUGP6

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.

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.

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.

4.2 Canada

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

4.2.1 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.

4.2.2 RF exposure compliance

(1) This module may be installed into any end product in both mobile and portable 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.

4.2.3 Meaning of certification number

The meaning of the marking of "IC:1788F-UGPZ6" on the UGPZ module means: "1788F-UGPZ6" is the certification number, and the term "IC" before the equipment certification number only signifies that Industry Canada technical specifications were met.

4.2.4 Requirements to end product

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

(1) Antenna

ALPS wishes that our customer use the UGPZ6 module without any modifications including antenna. If customer use a unique antenna, the I.C certification is required for the end product.

(2) Co-location.

This UGPZ6 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-UGPZ6
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Any similar wording that expresses the same meaning may be used.

4.3 Europe

The UGPZ6 module with CE marking will assist our customer into advance.

The end product containing UGPZ6 module with CE marking does not require further involvement of R&TTE directive Notified Body, where the end product installs UGPZ6 module with no modification of the antenna in conformance with ALPS's installation instructions.

In all other cases, or if our customer of the end product is in doubt then the end product integrating the UGPZ6 module must be assessed against Article 3.2 of the R&TTE Directive.

Note: The our customer for the end product containing UGPZ6 module without CE marking shall be required further application to R&TTE directive.

4.4 People's Republic of China

The UGPZ6 module has the following information on China certification.

- 1) Manufacturer
ALPS ELECTRIC CO., LTD
- 2) Model number
UGPZ6
- 3) CMII ID:xyZZZZZ

4.5 Mexico

4.5.1 The UGPZ6 module has the following information on Mexico, COFETEL certification.

- 1) Manufacturer
ALPS ELECTRIC CO., LTD
- 2) Model number
UGPZ6
- 3) ID:xxxxxxxxxxxx

4.5.2 Instruction manual for end product.

The our customer shall provide the following wordings in the instruction manual of the end product.

" Este equipo opera a titulo secundario, consecuentemente, debe aceptar interferencias perjudiciales incluyendo equipos de la misma clase y puede no causar interferencias a sistemas operando a titulo primario", and

" This equipment operates on a secondary basis and, consequently, must accept harmful interference, including from station of the same kind, and may not cause harmful interference to systems operating on a primary basis. "

4.6 Japan

4.6.1 Radio law (TELEC or other registered testing house)

The our customer for the end product will not require the certification of TELEC or other registered testing house for the end product, where UGPZ6 module with TELEC or other registered testing house certification shall be incorporated in the following applications.

(1) Antenna

ALPS wishes that our customer shall use the UGPZ6 module without any modifications including antenna. If customer use a unique antenna, the re-certification to TELEC or other registered testing house will be required for the UGPZ6 module.

Thus, our customer would be required to contact with ALPS before the modification of the antenna.

- (2) The outer cabinet of the end product shall be fixed by easily access method, such fixing with plus / minus screws to open the outer cabinet by general public.
The permanently fixing method, such using security screws are not allowed for mounting method.
The labeling to exterior of the end product has a meaning of “Contains transmitter device certified under Japanese radio law”, or similar wording. (see below)

「電波法適合無線設備を内蔵」
（“Contains transmitter device certified under Japanese radio law”）

- (3) Where outer cabinet of the end product containing UGPZ6 module is secured by the permanently securing method, such using security screws, the our customer for the end product shall obtain TELEC or other registered testing house certification by themselves for the end product, even if UGPZ6 module has been certified by TELEC or other registered testing house.

4.6.2 Telecommunications law (JATE or other registered testing house)

The end product containing UGPZ6 module shall be certified by JATE, where the end product is **directly connected** to telecommunication line, such public telephone, even if UGPZ6 module has been certified by JATE or other registered testing house, or not.

4.6.3 Wireless LAN voluntary standard (ARIB)

ARIB STD-T66 is a voluntary standard in Japan.

However, ALPS strongly recommend providing the following application for the end product.

- (1) User manual.

The user manual specifies the following cautions and explanation of markings indicated on the end product.

この機器の使用周波数帯では、電子レンジ等の産業・科学・医療用機器のほか、工場の製造ライン等で使用されている移動体識別用の構内無線局(免許を要する無線局)及び特定小電力無線局(免許を要しない無線局)並びにアマチュア無線局(免許を要する無線局)が運用されています。

1. この機器を使用する前に、近くで移動体識別用の構内無線局及び特定小電力無線局並びにアマチュア無線局が運用されていないことを確認して下さい。
2. 万一、この機器から移動体識別用の構内無線局に対して有害な電波干渉の事例が発生した場合には、速やかに使用周波数を変更するか又は電波の発射を停止した上、下記連絡先にご連絡頂き、混信回避のための処置等(例えば、パーティションの設置など)についてご相談して下さい。
3. その他、この機器から移動体識別用の特定小電力無線局あるいはアマチュア無線局に対して、有害な電波干渉の事例が発生した場合などの何かお困りのことが起きたときは、次の連絡先へお問い合わせください。

連絡先： _____

- (2) Sticker

The end product provides a sticker describing the same cautions of user manual.
There are no specifications for material, size and shape.

- (3) Catalogue, pamphlet and web site

The catalogue, pamphlet and web site for the end product specify the meaning of same cautions of user manual and meaning of markings shown in the end product.

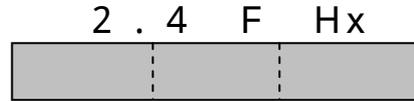
(4) Markings on end product

The following markings are marked on the end product and its package.

The user manual describes the meaning of the markings.

If there is no spacing on the end product, the sticker is used as an alternate.

<Markings on end product>



- 1) " 2.4 " means radio operated in 2.4 GHz bands.
- 2) " FH " means modulating type, FH-SS.
- 3) " x " means that distance for interference is less than "y" m on the assumption.

Product No.	UGPZ6
Output power	+3.0dBm / 0.002W max.
"x"	1
"y"	10m

- 4) "



" means the product is used in all frequency band from 2400MHz to 2483.5MHz and there are no possibilities of an avoidance to the other bands.

CAUTION

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