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Add: 12F-6, NO.81, Sec.1, Hsin Tai Wu Rd., Xizhi Dist., New Taipei City , Taiwan.

IPH-1062

Application Note Ver 1.0



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General Description

The IPH-1062 is a compact, surface mount Bluetooth low energy (BLE) compliant wireless module. It combines the latest RF transceiver technology with a sophisticated antenna circuit in a compact module. With only a few external components, robust BLE master or slave nodes can easily be built. Due to its small size, outstanding performance at low power consumption and easy modular handling, the IPH-1062 is leading the way for the new generation of Bluetooth low energy modules.

This technology is creating new opportunities for developers and manufacturers of Bluetooth devices and applications, bringing to life entirely new markets for devices that are low-cost and operate with low power wireless connectivity.

Applications

- 2.4 GHz Bluetooth Low Energy systems
- Mobile Phone Accessories
- Sports and Leisure Equipment
- Consumer Electronics
- Human Interface Devices (Keyboard, Mouse, Remote Control)
- USB Dongles
- Health Care and Medical

Due to the small size and the low power consumption, the IPH-1062 is perfectly suitable for battery-powered applications.



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Features

- Single mode module
- High performance, low-power microcontroller
- Master and Slave modes supported
- Ultra low power consumption
- GAP, GATT, SMP, L2CAP Bluetooth low energy profiles
- Excellent Link Budget (up to 97 dB)
- Suitable for systems Targeting Compliance with worldwide radio frequency regulations : ETSI EN 300 328 and EN 300 440 Class 2 (Europe), FCC CFR47 Part 15 (US), and ARIB STD-T66 (Japan)
- Application software :



Android / iOS App ; customization can be discussed

This App requires a BLE KeyChain device and this is the solution to keep you from leaving your smartphone or valuables behind.



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Specifications

• RF

- 2.4-GHz *Bluetooth* low energy Compliant and Proprietary RF System-on-Chip
- Supports 250-kbps, 500-kbps, 1-Mbps, 2-Mbps Data Rates
- Excellent Link Budget, Enabling Long- Range Applications Without External Front Modes End
- Programmable Output Power up to 0 dBm
- Excellent Receiver Sensitivity (–94 dBm at 1 Mbps), Selectivity, and Blocking Performance
- Suitable for Systems Targeting Compliance
 - With Worldwide Radio Frequency Regulations: ETSI EN 300 328 and EN 300 440 Class 2 (Europe), FCC CFR47 Part 15 (US) and ARIB STD-T66 (Japan)

• Microcontroller

- High-Performance and Low-Power 8051 Microcontroller Core With Code Prefetch
- In-System-Programmable Flash, 128- or 256-KB
- 8-KB RAM With Retention in All Power Modes
- Hardware Debug Support
- Extensive Baseband Automation, Including Auto-Acknowledgment and Address Decoding
- Retention of All Relevant Registers in All Power Modes

• Low Power

- Active-Mode RX Down to: 17.9 mA
- Active-Mode TX (0 dBm): 18.2 mA
- Power Mode 1 (4- μ s Wake-Up): 270 μ A
- Power Mode 2 (Sleep Timer On): 1 μ A
- Power Mode 3 (External Interrupts): 0.5 μ A
- Wide Supply-Voltage Range (2 V–3.6 V)



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Standard	Bluetooth low energy (BLE)
RF data rate	1Mbps, GFSK, 250 kHz deviation
TX Current @ 0 dBm	18.2 mA
RX Current (normal gain)	17.9 mA
PM2 Current	0.9 uA
PM3 Current	0.4 uA
Max. output power	5.3 dBi
Dimensions	25X17 mm
Operating temperature	-10~60°C
RF sensitivity	-Standard mode: typ. -87 dBm -High-gain mode: typ. -94 dBm
Output power	Typ. 0 dBm
Supply voltage	-0.3~3.9V

Block Diagram

DEXATEK TECHNOLOGY LTD.

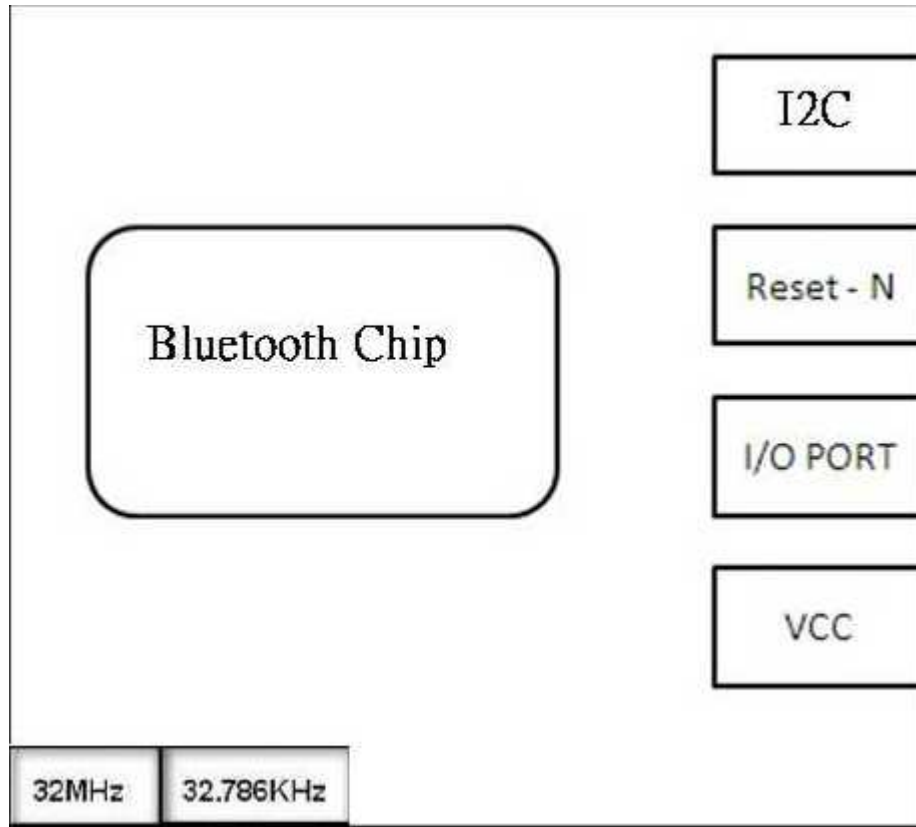
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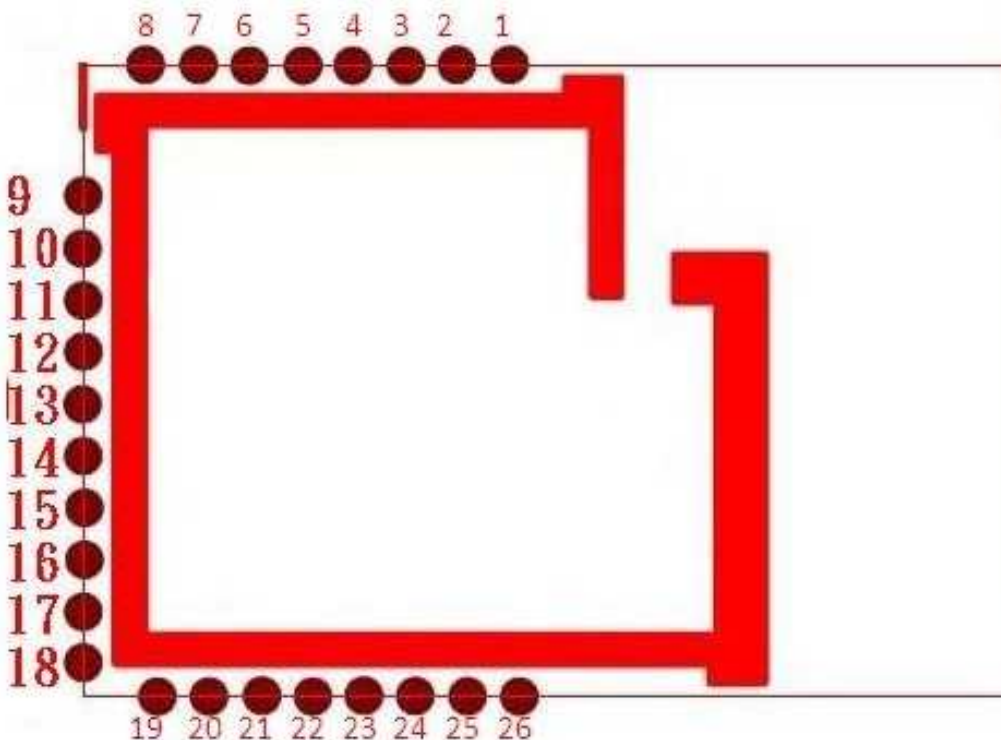
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Block Diagram of IPH-1062 Module Board



Pin Assignment

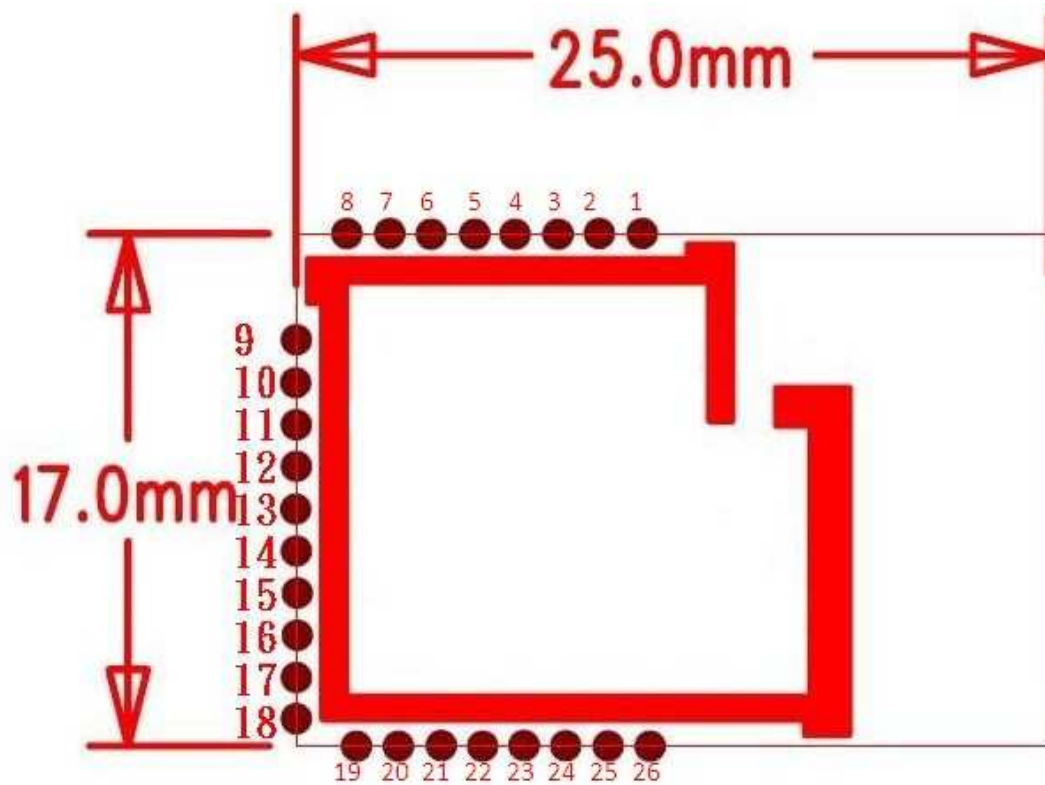




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Mechanical Drawing





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Federal Communication Commission Interference Statement

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.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

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



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Radiation Exposure Statement:

The product comply with the FCC portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

This device is intended only for OEM integrators under the following conditions:

The transmitter module may not be co-located with any other transmitter or antenna.

As long as condition above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

The product can be kept as far as possible from the user body or set the device to lower output power if such function is available. The final end product must be labeled in a visible area with the following: "Contains FCC ID: 2AAWXIPH1062". The grantee's FCC ID can be used only when all FCC compliance requirements are met.

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user



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regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.



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Industry Canada statement:

This device complies with RSS-210 of the Industry Canada 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.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radiation Exposure Statement:

The product comply with the Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

Déclaration d'exposition aux radiations:

Le produit est conforme aux limites d'exposition pour les appareils portables RF pour les Etats-Unis et le Canada établies pour un environnement non contrôlé.

Le produit est sûr pour un fonctionnement tel que décrit dans ce manuel. La réduction aux expositions RF peut être augmentée si l'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible.



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This device is intended only for OEM integrators under the following conditions: (For module device use)

The transmitter module may not be co-located with any other transmitter or antenna.

As long as condition above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

Tant que les condition ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.



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IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

NOTE IMPORTANTE:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling

The product can be kept as far as possible from the user body or set the device to lower output power if such function is available. The final end product must be labeled in a visible area with the following: "Contains IC: 11525A-IPH1062".

Plaque signalétique du produit final

L'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 11525A-IPH1062".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end



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