

Product Specification

HON-SR28-PRT, HON-SR28-BT

Wi-Fi Dual-band 1*1 11a/b/g/n/ac + Bluetooth Combo Module



Safety and Productivity Solutions

9680 Old Bailes Road

Fort Mill, SC 29707 USA

www.honeywell.com

www.honeywellaidc.com

Introduction

It has dual-band Wi-Fi and Bluetooth functionalities. It is based on NXP 88W8987 chipset, a highly-integrated IEEE 802.11a/b/g/n/ac MAC/Baseband/RF WLAN and Bluetooth Baseband/RF single chip. It can achieve up to a speed of 433.3Mbps with single stream 802.11ac WLAN connection. It is a perfect solution for a combination of Wi-Fi and BT technologies.

Product Specifications

Mechanical/Electrical

Dimensions (L*W*H): 15 x 13 x 2.15 mm

Antenna port: 2 Antenna port

Host system interfaces:

SDIO3.0 interfaces for WLAN

HS-UART and PCM interfaces for BT

Environmental

Operating Temperature -30°C to 85°

Storage Temperature -40°C to 125

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Radio Specifications

2.4GHz WLAN	
Frequency range	2412 MHz – 2462 MHz
IEEE	802.11b, 802.11g, 802.11n-HT20, 802.11n-HT40
Modulation	DSSS/OFDM
Channel spacing	5MHz
Typical Value	802.11b: 17dBm $\pm$ 2dB 802.11g: 15dBm $\pm$ 2dB 802.11n: 14dBm $\pm$ 2dB
Antenna Type	PCB Antenna
Antenna Gain	4.90dBi

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5GHz WLAN	
Frequency range	802.11a/n-HT20/ac-VHT20: 5180~5320MHz, 5500~5700MHz, 5745~5825MHz 802.11n-HT40/ac-VHT40: 5190~5310MHz, 5510~5670MHz, 5755~5795MHz 802.11ac-VHT80: 5210MHz, 5290MHz, 5530MHz, 5610MHz, 5775MHz
IEEE	802.11a,802.11n HT20, 802.11n HT40, 802.11ac-VHT20, 802.11ac-VHT40, 802.11ac-VHT80
Modulation	OFDM
Channel spacing	20MHz, 40MHz, 80MHz
Typical Value	802.11a: 15dBm $\pm$ 2dB 802.11n: 14dBm $\pm$ 2dB 802.11ac: 13dBm $\pm$ 2dB
Antenna Type	PCB Antenna
Antenna Gain	2.80dBi

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Bluetooth (BLE only)	
Frequency range	2402 MHz – 2480 MHz
Modulation	GFSK
Number of channels	40
Channel spacing	2MHz
Antenna Type	FPC Antenna
Antenna Gain	4.20dBi

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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.

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.

This module has been tested and found to comply with Part 15C, Section 15.247 and Part 15E, Section 15.407 requirements for Modular Approval.

The module is tested for standalone mobile RF exposure use condition.

- (1) The antenna must be installed such that 20 cm is maintained between the antenna and users,
- (2) The transmitter module may not be co-located with any other transmitter or antenna.

In the event that these conditions cannot 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 cannot 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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

The following antennas have been certified for use with this module.

Only antennas of the same type with equal or lower gain may also be used with this module.

Other types of antennas and/or higher gain antennas may require the additional authorization for operation. Antenna Specification list below:

Antenna Type	Frequency Bands (MHz)	Antenna Gain (dBi)
FPC	2400 ~ 2483.5	2.4

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When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text: "Contains FCC ID: HD5-HONSR28PRT". The FCC ID can be used only when all FCC compliance requirements are met.

This transmitter is tested in a standalone mobile RF exposure condition and any co-located or simultaneous transmission with other transmitter(s) class II permissive change re-evaluation or new certification.

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 reevaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

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 product which integrates this module.

The host integrator must follow the integration instructions provided in this document and ensure that the composite-system end product complies with the requirements by a technical assessment or evaluation to the rules and to KDB Publication 996369.

OEM/Host manufacturers are ultimately responsible for the compliance of the Host and Module. The final product must be reassessed against all the essential requirements of the FCC rule such as FCC Part 15 Subpart B before it can be placed on the US market. This includes reassessing the transmitter module for compliance with the Radio and EMF essential requirements of the FCC rules. This module must not be incorporated into any other device or system without retesting for compliance as multi-radio and combined equipment.



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ISED Statement:

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de classe B est conforme à la norme canadienne ICES-003.

This device complies with Industry Canada licence-exempt RSS standard(s).

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 the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

- 1) *l'appareil ne doit pas produire de brouillage, et*
- 2) *l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

RF Radiation Exposure Statement:

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Déclaration d'exposition aux radiations:

Cet appareil est conforme aux limites d'exposition aux rayonnements définies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à une distance minimale de 20 centimètres entre le radiateur et votre corps.

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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 above conditions is 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:

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

Tant que les 1 conditions 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.

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 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 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.

Required end product labeling:

This transmitter module is authorized only for use in device where the antenna may be installed and operated with greater than 20 cm between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains IC: 1693B-HONSR28PRT".

Plaque signalétique du produit final

Ce module émetteur est autorisé uniquement pour une utilisation dans un appareil où l'antenne peut être installée et utilisée à plus de 20 cm entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 1693B-HONSR28PRT".



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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 product which integrates this module.

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

The following text, or an equivalent notice, that shall be displayed in a conspicuous location, either in the user manual or on the device, or both:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

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

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

l'énoncé qui suit, ou l'équivalent, à un endroit bien en vue dans le manuel d'utilisation ou sur l'appareil, ou encore aux deux endroits :

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- 1. L'appareil ne doit pas produire de brouillage;*
- 2. L'appareil doit accepter toute interférence, y compris toute interférence pouvant entraîner un fonctionnement indésirable du dispositif.*