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HON HAI PRECISION IND. CO., LTD.  
5F-1, 5 Hsin -An Rd.  
Ambit Microsystems(Shanghai) LTD.  
TEL: 86-21-6120-6688  
Fax: 86-21-5774-9230  
+886-3-577-5100

<p style="text-align: center;">User Manual Wi-Fi Module</p>
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<b>Part Name</b>	<b>Wi-Fi Module</b>
<b>Doc. Rev.</b>	<b>0.0</b>
<b>Foxconn P/N.</b>	<b>J20H069</b>

<b>Prepared by</b>	<b>Reviewed by</b>	<b>Approved by</b>
<b>Fei-shan Feng</b>	<b>Opo. Li</b>	



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## **1. Introduction**

The J20H069 802.11b/g/n module provides wireless modem functionality utilizing direct sequence spread spectrum and OFDM/CCK technology. This module is based on Atheros MCKY AR9374 solution which is integrated 2.4GHz IEEE802.11 b/g/n (MAC/baseband/radio) and power amplifiers (PA).

### **1.1 Scope**

The wireless LAN is compliant to IEEE 802.11b and IEEE 802.11g and IEEE 802.11n standard. The data rate of 802.11b is up to 11Mbps and fallback rates of 5.5, 2, 1Mbps. The data rate of 802.11g is up to 54Mbps and fallback rates of 48,36,24,18,12,9, 6Mbps. The data rate of 802.11n HT20 with 800ns GI is up to 65Mbps and fallback rates of 58.5, 52, 39, 26, 19.5, 13, 6.5Mbps; the data rate of 802.11n HT20 with 400ns GI is up to 72.2Mbps and fallback rates of 65, 57.8, 43.3, 28.9, 21.7, 14.4, 7.2Mbps. The data rate of 802.11b/g/n is backward compatible.

This is 2T2R MIMO device.

This module is installed as a client device in TV platform.

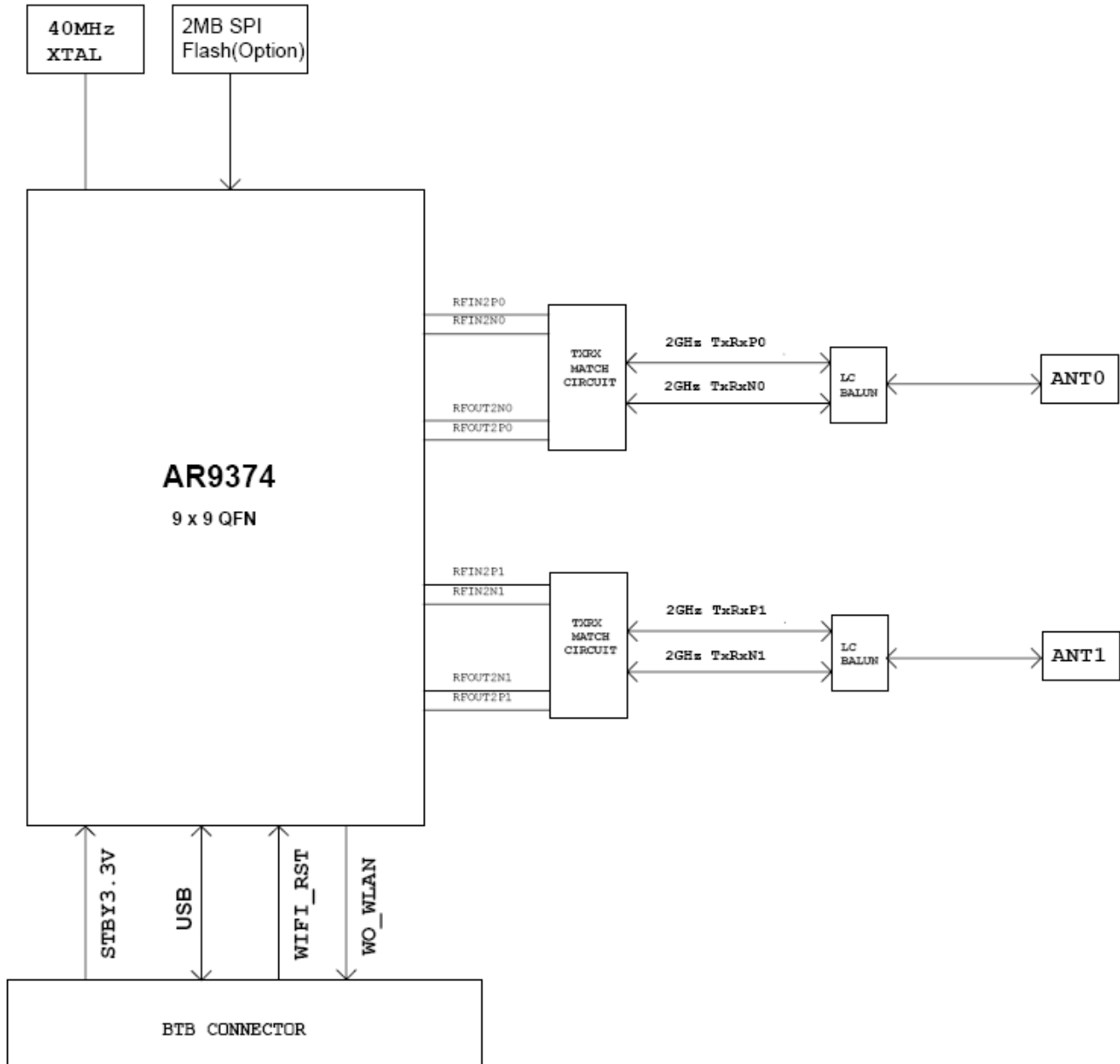
### **1.2 Function**

- IEEE802.11b/g/n (2X2) based on Atheros AR9374 solution
- USB 2.0 Interface, High and Full Speeds supported.
- Module is powered by the host with a 3.3V +/- 10% supply.
- Two PCB printed antennas. (TBD)
- Two switch type antenna connector for test
- 4 layers through hole PCB design with halogen free FR4 material

## 2. Product Overview

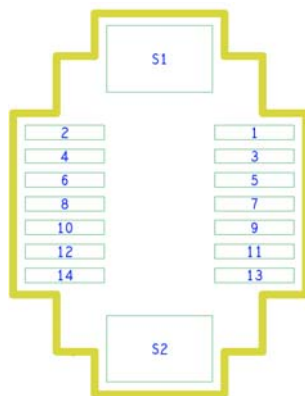
### 2.1 Block Diagram

The general HW architecture is shown below Figure:



## 2.2 Interface and Connector

Pin definition:



Pin Number	Symbol Name	Status	Pin definition
1	GND		Ground
2	WIFI_RST	I/O	Reset pin
3	USB_DP	I/O	USB positive data
4	NC		
5	USB_DN	I/O	USB negative data
6	NC		
7	GND		Ground
8	WO_WLAN	I/O	
9	GND		Ground
10	STBY3.3V	P	+3.3 V Power input
11	GND		Ground
12	STBY3.3V	P	+3.3 V Power input
13	GND		Ground
14	STBY3.3V	P	+3.3 V Power input
S1	GND		Ground
S2	GND		Ground

### 3. Product Specification

#### 3.1 RF Specification

IEEE802.11b ( For CE testing , Refer to the CE regulating power table )

802.11b:20dBm

802.11g:24dBm

802.11n:24dBm

#### 3.2 Electrical Specification

##### 3.2.1 Recommended operating rating

Element	Symbol	Min	Typ	Max	Unit
DC supply voltage	UV+	3.0	3.3	3.6	(V)

##### 3.2.2 DC Characteristics

Symbol	Parameter	Min	Typ	Max	Unit
STBY3.3V	Supply voltage	3.0	3.3	3.6	(V)
	Tx Current(1M/18dBm MIMO)	--	450	540	(mA)
	Tx Current(54M/15dBm MIMO)	--	350	420	(mA)
	Tx Current(MCS7/14dBm/HT20 MIMO)	--	350	420	(mA)
	Rx Current	--	170	200	(mA)

##### 3.2.3 ESD Information

Mode	Level	Unit
HBM	+/-1500	V
MM	+/-200	V

#### 3.3 Mechanical Specifications

Dimension (W x L): 55mmx20mm

PCB: 4 layer HF-FR4 design



### **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:**

This equipment complies with IC 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.

### **Déclaration d'exposition aux radiations:**

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

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

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

- 1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et
  - 2) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.
- Tant que les 2 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:**



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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**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains IC: 2878D-J20H069".

### **Plaque signalétique du produit final**

Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 2878D- J20H069".

### **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.

### **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.





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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.

### ***Radiation Exposure Statement:***

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.

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

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



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As long as 2 conditions 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 reevaluating

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

### **End Product Labeling**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: MCLJ20H069". 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 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.

### **CE statement:**

Declare under our own responsibility that the product J20H069 to which this declaration refers conforms with the relevant standards according to the regulation in Article 3.1.a, 3.1.b and 3.2 of the R&TTE Directive

1999/5/EEC of the European Community

Applied Standards:

- ETSI EN 300 328 V1.7.1
- ETSI EN 301 489-1



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- ETSI EN 301 489-17
- ETSI EN 62479
- IEC/EN 60950-1

National Authorities were informed according to Article 6.4 of Frequency Notification.

Special Requirements are considered. The product is labeled with CE Marking.



Any unauthorized modification of the product voids this declaration.

This product can be used in the following countries

AT	BE	CY	CZ
DK	EE	FI	FR
DE	GR	HU	IE
IT	LV	LT	LU
MT	NL	PL	PT
SK	SI	ES	SE
GB	IS	LI	NO
CH	BG	RO	TR

For Taiwan 警語：(電信管制射頻器材使用)


經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立



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即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

**Note:** 1. 本模組於取得認證後將依規定於模組本體標示審驗合格標籤 2. 系統廠商應於平台上標示「本產品內含射頻模組:  XXXyyyLPDzzzz-x (NCC ID) 」字樣

