

USER'S GUIDE

EA-V2

Version: 1.0

Manufacturer	CC&C Technologies, Inc.
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Revision History

Version	Date	Change Description
1.0	03/21, 2018	Initial release

CONTENT

Overview.....	4
Features.....	4
Factory Options.....	4
General Specification	5
MINI PCI EXPRESS PIN ASSIGNMENT.....	6
Block Diagram	7
Mechanical	8

Overview

WM-8192EE is a WLAN 11n minicard(PCIE), which fully supports the features and functional compliance of IEEE 802.11e and i standards. It supports up to 150Mbps high -speed wireless network connections.

It is designed to provide excellent performance with minimum power consumption and enhance the advantages of robust system and cost-effective. It is targeted at competitive superior performance, better power management applications.

Features

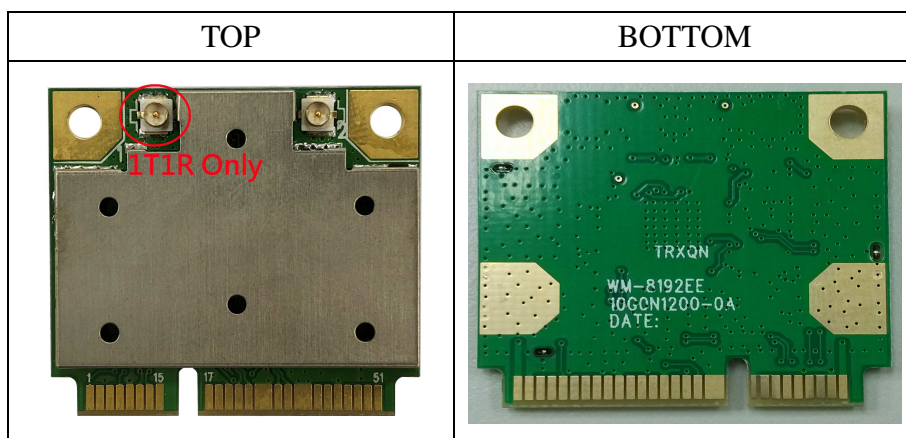
- Operates in 2.4 frequency bands

Freq.	Bands	Frequency
2.4 GHz		2.412-2.472 GHz, 2.484 GHz

- Data rates of up to 150 Mbps for 40 MHz channels
- 802.11e-compatible bursting
- Support for the IEEE 802.11e, and i standards
- BPSK, QPSK, 16 QAM, 64 QAM, DBPSK, DQPSK, and CCK modulation schemes
- WEP, TKIP, and AES hardware encryption Schemes

Factory options

- PCIE connector
- RF output by IPEX connector



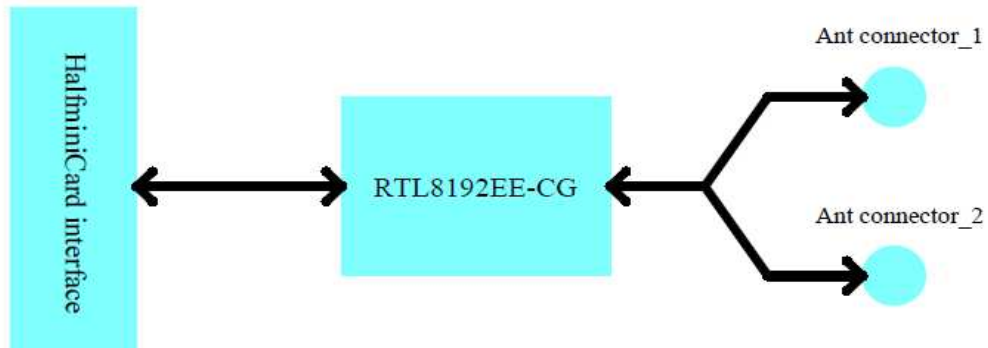
General Specification

Model Name	WM-8812AE
Product Name	11n 1T1R minicard (PCIE)
Standard	802.11b/g/n
Data Transfer Rate	1,2,5.5,6,11,12,18,22,24,30,36,48,54,60,90,120 and maximum of 150Mbps
Modulation Method	BPSK/ QPSK/ 16-QAM/ 64-QAM/ DBPSK/ DQPSK/ CCK
Frequency Band	2.4GHz ISM Band
Spread Spectrum	IEEE 802.11b: CCK (Complementary Code Keying) IEEE 802.11g/n:OFDM (Orthogonal Frequency Division Multiplexing)
RF Output Power (tolerance \pm 2dBm)	17dBm – 802.11b@CCK 11Mbps 15dBm – 802.11g@OFDM 54Mbps 13dBm – 802.11n@MCS7_HT20 13dBm – 802.11n@MCS7_HT40
Operation Mode	Ad hoc, Infrastructure, Soft AP
Receiver Sensitivity	-82dBm – 802.11b@11Mbps -71dBm – 802.11g@54Mbps -67dBm – 802.11n@MCS7_BW20 -64dBm – 802.11n@MCS7_BW40
OS Support	Linux
Security	64 bit/128 bit WEP, TKIP, AES, WPA, WPA2 WPS button for easy and secure establishment of a wireless network
Interface	PCIE connector
RF output	RF IPEX connectors
Operating Temperature	0 - 50° C ambient temperature
Storage Temperature	-10 - 70° C ambient temperature
Humidity	5 to 90 % maximum (non-condensing)
Size	29.85 x 26.65 mm (L x W)

MINI PCI EXPRESS PIN ASSIGNMENT

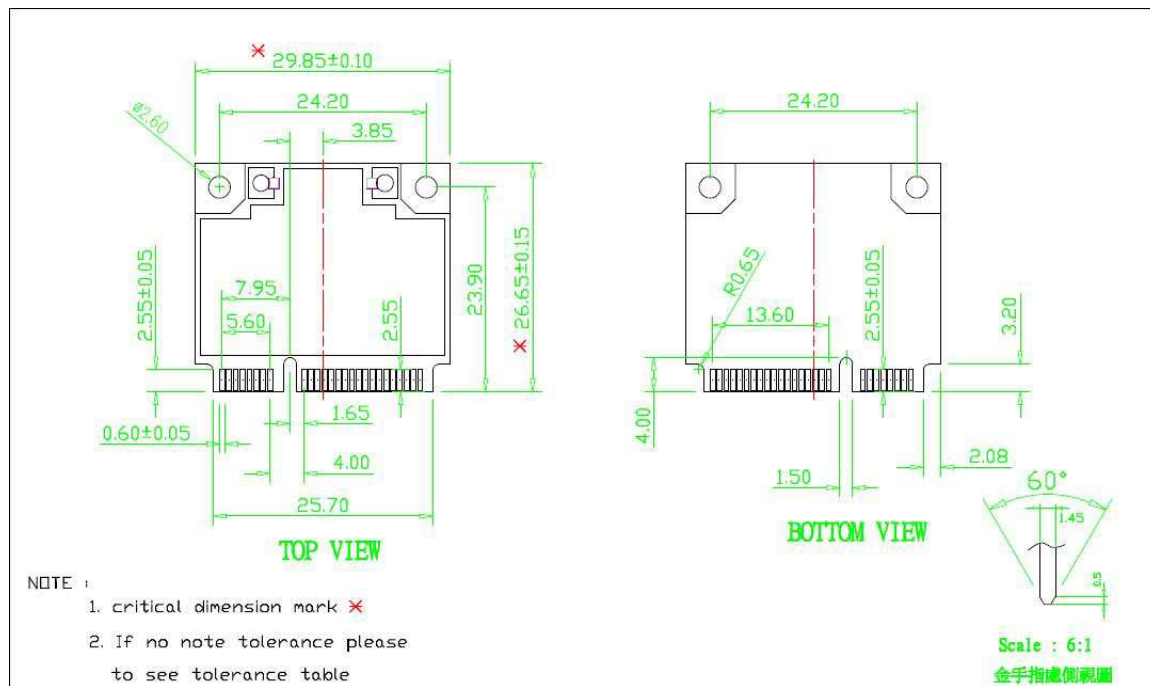
PIN#	Pin Name		PIN#	Pin Name	
1	WAKE#	YES	2	+3.3Vaux	YES
3	COEX1	NC	4	GND	YES
5	COEX2	NC	6	+1.5V	NC
7	CLKREQ#	YES	8	UIM_PWR	NC
9	GND	YES	10	UIM_DATA	NC
11	REFCLK-	YES	12	UIM_CLK	NC
13	REFCLK+	YES	14	UIM_RESET	NC
15	GND	YES	16	UIM_VPP	NC
17	RESERVED	NC	18	GND	YES
19	RESERVED	NC	20	W_DISABLE#	YES
21	GND	YES	22	PERST#	YES
23	PERn0	YES	24	+3.3Vaux	NC
25	PERp0	YES	26	GND	YES
27	GND	YES	28	+1.5V	NC
29	GND	YES	30	SMB_CLK	NC
31	PETn0	YES	32	SMB_DATA	NC
33	PETp0	YES	34	GND	YES
35	GND	YES	36	USB_D-	NC
37	GND	YES	38	USB_D+	NC
39	+3.3Vaux	YES	40	NC	NC
41	+3.3Vaux	YES	42	LED_WWAN#	NC
43	GND	YES	44	LED_WLAN#	YES
45	RESERVED	NC	46	LED_WPAN#	NC
47	RESERVED	NC	48	+1.5V	NC
49	RESERVED	NC	50	GND	YES
51	RESERVED	NC	52	+3.3Vaux	YES

Block Diagram



Mechanical

Dimensions (mm)	Length	Width	Height
	29.85 (Tolerance:±0.1mm)	26.65 (Tolerance:±0.1mm)	4.45 (Tolerance:±0.15mm)



			CC&C TECHNOLOGIES, INC.						SCALE	DESCRIPTION	MODEL NO.	APPROVAL	
									Q'TY	N12	BWG NO.	DESIGNED	
									PCB/SET	MATERIAL	FINISH	Micah	
ITEM	DESCRIPTION	DATE	TOL	0.05	0.08	0.12	0.20	0.25	0.30	UNIT	DWG. REV.	PARTS NO.	DRAWING
										MM			Micah

Federal Communication Commission Interference Statement

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 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.

IMPORTANT NOTE:

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

Country Code selection feature to be disabled for products marketed to the US/CANADA

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,
- 3) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

As long as 3 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 re-evaluating 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: **R33EAV2WIFI**”.

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.

Industry Canada statement:

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*

Cet appareil contient des émetteurs / récepteurs exempts de licence qui sont conformes au (x) RSS (s) exemptés de licence d'Innovation, Sciences et Développement économique Canada. L'opération est soumise aux deux conditions suivantes:

- (1) Cet appareil ne doit pas causer d'interférences*
- (2) Cet appareil doit accepter toute interférence, y compris les interférences pouvant provoquer un fonctionnement indésirable de l'appareil*

This radio transmitter (IC: 7848A-EAV2WIFI) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (IC: 7848A-EAV2WIFI) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Antenna info.	Antenna		Peak gain (dBi)
Model	Type	Connector	2400~2483.5MHz
CSL-AN2400-100840-B01	Dipole	R-SMA	2dBi

Radiation Exposure Statement:

This equipment complies with Canada 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 Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20cm entre le radiateur et votre corps.

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

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

As long as 1 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:

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

Tant que les 1 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.

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 final end product must be labeled in a visible area with the following: "Contains IC:7848A-EAV2WIFI".

Plaque signalétique du produit final

Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: **7848A-EAV2WIFI**".

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.