



Product Specification

Model Name: W725D0

Part No.: WW725D0566A20H

IEEE 802.11ABGN 2T2R USB Module

Version: 1.1

Date: June. 5. 2013

Release History

DATE	REV	Description of Change
2012/07/30	0.1	Preliminary specification release
2012/10/02	0.2	Add power consumption
2012/10/04	0.3	Update block diagram
2012/10/13	0.4	Update dimension and power consumption
2012/11/15	1.0	Change model name to W725D0, update RF Spec.
2013/5/7	1.0	Customized for Actiontec
2013/6/5	1.1	Delete dual MAC description and Modify FCC Label



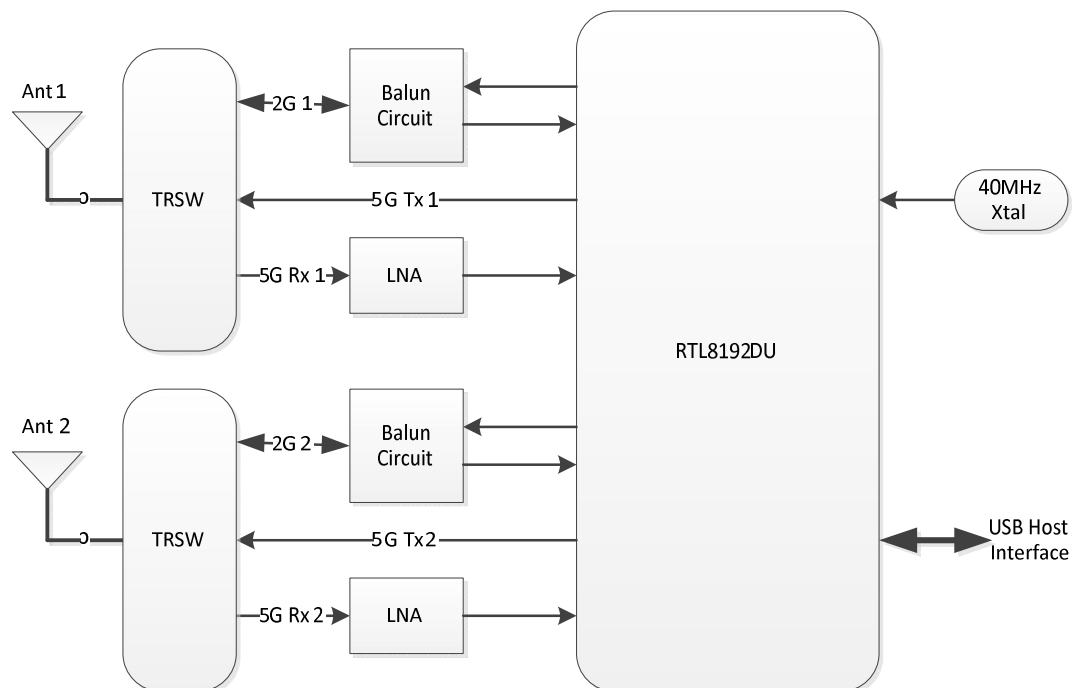
W725D0

IEEE 802.11ABGN 2T2 USB Module

1 Product Features

- Supports 2T2R 2.4/5GHz dual-band
- Maximum PHY data rate up to 144.4 Mbps using 20MHz bandwidth, 300Mbps using 40MHz bandwidth
- Short Guard Interval (400ns)
- Sounding packet
- Host interface complies with USB Specification Revision 2.0
- Supports IEEE 802.11 e/ i/ h/ k
- WAPI (Wireless Authentication Pivacy Infrastructure) certified
- Frame aggregation for increased MAC efficiency (A-MSDU, A-MPDU)
- Low latency immediate High-Throughput Block Acknowledgement (HT-BA)
- Long NAV for media reservation with CF-End for NAV release
- PHY-level spoofing to enhance legacy compatibility
- MIMO power saving mechanism
- Channel management and co-existence
- Supports Wake-On-WLAN via Magic Packet and Wake-up frame
- Transmit Opportunity (TXOP) Short Inter-Frame Space (SIFS) bursting for higher multimedia bandwidth
- WiFi Direct supports wireless peer to peer applications.

2 Block Diagram

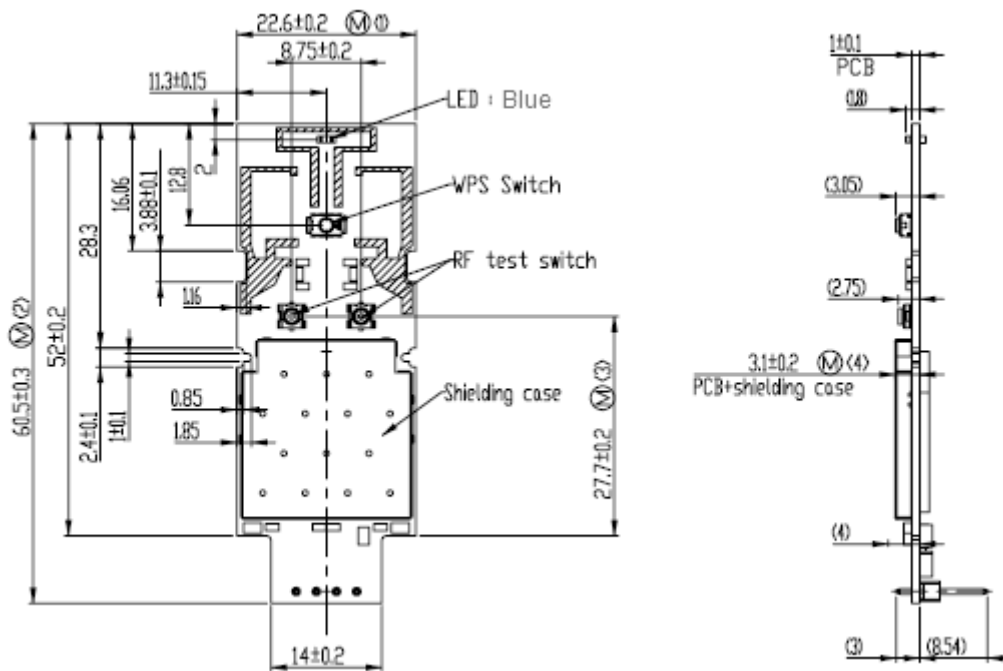


3 General Specification

■ Module Name					
• W725D0					
■ Product Specification					
• WLAN Standard	IEEE 802.11a/b/g/n				
• Host Interface	USB 2.0				
• Host Connector Options	4 pins header type connector				
• Major Chipset	Realtek RTL8192DU				
• Dimensions (board size)					
		Minimum	Typical	Maximum	Unit
	Length	60.2	60.5	60.8	mm
	Width	22.4	22.6	22.8	mm
	Height	2.9	3.1	3.3	mm
	Weight	6.8	7	7.2	g
• Antenna Connector Options	2 printed PCB antennas on board				
■ Operating Condition					
		Minimum	Typical	Maximum	Unit
• Voltage	DC	4.74	5	5.25	V
• Temperature		0		70	°C
• Storage temperature		-20		70	°C
• Humidity Non-Operating		10		80	%
■ Electrical Specification					
• Frequency Range	2400 ~ 2483 MHz; 5150 ~ 5825 MHz				
• Band Width	20MHz/ 40MHz Mixed mode				
2.4GHz Band					
• Output power					
		Minimum	Typical	Maximum	Unit
802.11b		15	17	19	dBm
802.11g	54Mbps	9	11	13	dBm
802.11n/ HT20	MCS7	7	9	11	dBm
802.11n/ HT40	MCS7	7	9	11	dBm
• Receiver Sensitivity					
		Minimum	Typical	Maximum	Unit
802.11b	11Mbps			-80	dBm
802.11g	54Mbps			-65	dBm
802.11n/ HT20	MCS7			-64	dBm

802.11n/ HT40	MCS7			-61	dBm
5GHz Band					
• Output power					
		Minimum	Typical	Maximum	Unit
802.11a	54Mbps	8	10	12	dBm
802.11n/ HT20 MCS7	Lower/ Middle Band	7	9	11	dBm
802.11n/ HT20 MCS7	Upper Band	5	7	9	dBm
802.11n/ HT40 MCS7	Lower/ Middle Band	7	9	11	dBm
802.11n/ HT40 MCS7	Upper Band	5	7	9	dBm
• Receiver Sensitivity					
		Minimum	Typical	Maximum	Unit
802.11a	54Mbps			-65	dBm
802.11n/ HT20	MCS7			-64	dBm
802.11n/ HT40	MCS7			-61	dBm

4 Mechanical Dimension



5 Power Consumption

Test condition

OS : Windows XP

Channel 6 : 2437MHz

Standard : IEEE802.11B,G.N

Input voltage for whole circuit : 4.97V

TX uses continuous mode

Test tool

MP_Kit_RTL11n_DualMAC_9xD_USB_v019_20120307

5.1 Test result :

Continuous TX/RX @ 2.4GHz

Mode	Standard	Current (mA)	
		mA	DAC
TX	1M	391	41
	11M	238	41
	6M	384	52
	54M	384	52
	HT20-MCS0	373	48
	HT20-MCS7	373	48
	HT40-MCS0	370	48
	HT40-MCS7	371	48
RX	1M	249	41
	11M	249	41
	6M	243	52
	54M	243	52
	HT20-MCS0	245	48
	HT20-MCS7	245	48
	HT40-MCS0	245	48
	HT40-MCS7	245	48

Test condition

OS : Windows XP

Channel 165 : 5825MHz

Standard : IEEE802.11A, AN

Input voltage for whole circuit : 4.97V

TX uses continuous mode

5.2 Test result :

MP_Kit_RTL11n_DualMAC_9xD_USB_v019_20120307

Continuous TX/RX @ 5GHz

Mode	Standard	Current (mA)	
		mA	DAC
TX	6M	377	46
	54M	378	46
	HT20-MCS0	369	42
	HT20-MCS7	369	42
	HT40-MCS0	395	42
	HT40-MCS7	394	45
	RX	6M	242
54M		241	46
HT20-MCS0		241	42
HT20-MCS7		243	42
HT40-MCS0		244	45
HT40-MCS7		244	45

Test condition

OS : Windows XP

Channel 6 : 2437MHz

Standard : IEEE802.11G,N

RF output connects with AP (D-Link DIR-635, 2T3R)

Input voltage for whole circuit : 4.97V

Throughput test mode

Distance Limit: 1M (Signal & Quality 100%)

Test driver

Realtek,

RTL8192DU_Drv_1016.1.0413.2012_UI_1.00.0180.All_In_One_Driver_Merge
d_UI.L**5.3 Test result : Throughput test @2.4GHz**

Mode	Standard	Current (mA)	
		Min	Max
TX	54M	197	210
	HT20-MCS7	380	411
	HT40-MCS7	275	382
RX	54M	194	198
	HT20-MCS7	186	201
	HT40-MCS7	197	205
Uninstall Driver		20	
Idle (Non Connect)		178	
Idle (associated)		183	
Driver disable		126	

Test condition

OS : Windows XP

Channel 165 : 5825MHz

Standard : IEEE802.11A,N

RF output connects with AP (D-Link DIR-635, 2T3R)

Input voltage for whole circuit: 4.97V

Throughput test mode

Distance Limit: 1M (Signal & Quality 100%)

Test driver

Realtek,

RTL8192DU_Drv_1016.1.0413.2012_UI_1.00.0180.All_In_One_Driver_Merge
d_UI.L**8.4 Test result : Throughput test @5GHz**

Mode	Standard	Current (mA)	
		Min	Max
TX	54M	313	323
	HT20-MCS7	332	356
	HT40-MCS7	320	367
RX	54M	271	281
	HT20-MCS7	240	278
	HT40-MCS7	243	276
Uninstall Driver		21	
Idle (Non Connect)		168	
Idle (associated)		245	
Driver disable		140	

10. Package

1. 贴附MAC&SN

2. 将产品放入气泡袋

3. 将产品放入组装好的蜂巢

4. 将产品放入组装好的蜂巢

5. 蜂巢组装图

6. 将隔板放入底层

7. 将产品放入组装好的蜂巢中

8. Carton 封装好前后各贴一张易碎贴

蜂巢拆解图

Model Name: WW725D0	Customer:
Rev: A	Remark:
Designed : Frank	Checked:
2013-5-8	Approved:

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.

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

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

IMPORTANT NOTE:

FCC 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.

Note: The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all WiFi product marketed in US must fixed to US operation channels only.

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.

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 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: LNQ802RUN2”. 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.

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.

Caution :

(i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

(ii) high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Avertissement:

(i) les dispositifs fonctionnant dans la bande 5 150-5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

(ii) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5 250-5 350 MHz et 5 650-5 850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

FOR MOBILE DEVICE USAGE

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 coimplanté 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:

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: 2496A-802RUN2".

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: 2496A-802RUN2".

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.

Caution :

(i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

(ii) high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Avertissement:

(i) les dispositifs fonctionnant dans la bande 5 150-5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

(ii) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5 250-5 350 MHz et 5 650-5 850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.