802.11 abgn(ac)+ BT 4.2 combo module

Wistron NeWeb Corporation

DHUR-SY63

User Manual

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

Operation of this device is restricted to indoor use only

Integration instructions for host product manufacturers

Applicable FCC rules to module

FCC Part 15.247 / 15.407

Summarize the specific operational use conditions

The module is must be installed in mobile device.

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. 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.

Limited module procedures

Not applicable

Trace antenna designs

Not applicable

RF exposure considerations

20 cm separation distance and co-located issue shall be met as mentioned in "Summarize the specific operational use conditions".

Product manufacturer shall provide below text in end-product manual

"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."

Antennas

Model name	Antenna type	Antenna gain (dBi)					Antenna connector	Remark
		2400 ~ 2483.5MHz	5150 ~ 5250MHz	5250 ~ 5350MHz	5470 ~ 5725MHz	5725 ~ 5850MHz		
Wi-Fi ANT-0	Printed	1.58	2.43	3.4	4.35	4.26	N/A	For Wi Fi
Wi-Fi ANT-1	Printed	1.55	2.58	2.55	2.51	2.65	N/A	For Wi Fi
NA	Printed	-3.59	--	--	--	--	N/A	For BT

Label and Compliance Information

Product manufacturers need to provide a physical or e-label stating

“Contains FCC ID: AK8DHURSY63” with finished product

Information on Test Modes and Additional Testing Requirements

Test tool: MT7663 QA, v0.0.2.6 shall be used to set the module to transmit continuously.

Additional Testing, Part 15 Subpart B Disclaimer

The module is only FCC authorized for the specific rule parts listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed

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: 409B-DHURSY63) *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: 409B-DHURSY63) *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 information

Model name	Antenna type	Antenna gain (dBi)					Antenna connector	Remark
		2400 ~ 2483.5MHz	5150 ~ 5250MHz	5250 ~ 5350MHz	5470 ~ 5725MHz	5725 ~ 5850MHz		
Wi-Fi ANT-0	Printed	1.58	2.43	3.4	4.35	4.26	N/A	For Wi Fi
Wi-Fi ANT-1	Printed	1.55	2.58	2.55	2.51	2.65	N/A	For Wi Fi
NA	Printed	-3.59	--	--	--	--	N/A	For BT

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) for devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the e.i.r.p. limit;

(iii) for devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate; and

Operations in the 5.25-5.35GHz band are restricted to indoor usage only.

Avertissement:
(i) les dispositifs fonctionnant dans la bande de 5150 à 5250MHz 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) pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5250 à 5350MHz et de 5470 à 5725 MHz doit être conforme à la limite de la p.i.r.e;

(iii) pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis (pour les dispositifs utilisant la bande de 5725 à 5850 MHz) doit être conforme à la limite de la p.i.r.e. spécifiée pour l'exploitation point à point et l'exploitation non point à point, selon le cas;

Les opérations dans la bande de 5.25-5.35GHz sont limités à un usage intérieur seulement.

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: 409B-DHURSY63”.

Plaque signalétique du produit final

Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 409B-DHURSY63".

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.

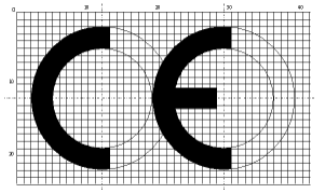
Europe – EU Declaration of Conformity

This device complies with the essential requirements of the Radio Equipment directive: 2014 / 53 / EU. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the Radio Equipment directive: **2014 / 53 / EU**:

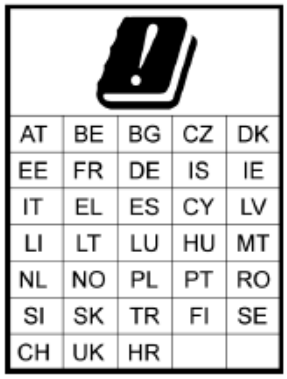
EN 300 328 V2.1.1
EN 301 893 V2.1.1
EN 300 440 V2.1.1
Draft EN 301 489-1 V2.2.0
EN 301 489-3 V2.1.1
Draft EN 301 489-17 V3.2.0
EN 62311:2008
EN 50665:2017
EN 50385:2002
IEC 62368-1:2014; and/or
EN 62368-1:2014+A11:2017

19.54 dBm, 2412-2472MHz (Wi Fi)
4.51 dBm, 2402-2480MHz (BT EDR)
0.26 dBm, 2402-2480MHz (BT LE)
21.41 dBm, 5150-5250MHz
21.29 dBm, 5250-5350MHz
22.67 dBm, 5470-5725MHz
13.95 dBm, 5745-5825MHz
SW version: 1.0

The minimum distance between the user and/or any bystander and the radiating structure of the transmitter is 20cm.



5150 ~ 5350 MHz is limited to indoor used in below countries.



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

端末機器の技術基準設計認証の認定番号
本製品は以下に認証を受けたものです。
認証機器名:DHUR-SY63
認定番号: R 201-XXXXXX

Taiwan 警語

第十二條→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。

第十四條→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。

無線資訊傳輸設備避免影響附近雷達系統之操作。

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: CCXXxxYYyyyZzW」字樣.

Table of Contents

1. INTRODUCTION

DHUR-SY63 is a 802.11 a/b/g/n /ac and Bluetooth Combo module that provides the easiest way to wireless networking. This User Manual contains detailed instructions in the operation of this product. Please keep this manual for future reference.

System Requirements

- 128 MB of RAM or later (recommended)
- 300 MHz processor or higher

2. Driver/Utility Installation

The driver should have been installed before the TV is shipped from the manufacturer. You can start using its network function without installing driver or utility.

3. Connecting to an Existing Network

1. Use the remote control that came with your TV to access the network configuration settings page.

2. Select the scanning wireless network function. The system starts to scan for available network. On this list, click Refresh to refresh the list at any time

3. Select the network you want to connect to.

4. If the chosen network has security enabled, you will have to setup corresponding security parameter. Contact the network manager for the correct settings. Select the security type and fill in required parameters. The options include the following:

    - WPA/WPA2/CCKM
    - WPA/WPA2 Passphrase
    - 802.1x
    - Pre-Shared Key (Static WEP)
    - None

4. Modifying a Wireless Network

4.1 Modifying General Settings

1. Use the remote control that came with your TV to access the network configuration settings page.
2. From the profile list, select one profile and choose the modify function.
3. Modify the settings below for your network.

Profile Name	Identifies the configuration wireless network profile. This name must be unique. Profile names are not case sensitive.
Client Name	Identifies the client machine.
Use this profile for Access Point mode	Configures station to operate in Access Point mode.
Network Names (SSIDs)	The IEEE 802.11 wireless network name. This field has a maximum limit of 32 characters. Configure up to three SSIDs (SSID1, SSID2, and SSID3).

4.2 Modifying Security Settings

1. Use the remote control that came with your TV to access the network configuration settings page.
2. Select a security option of this wireless network. This product provides security options below. Contact your wireless network administrator for choosing a correct option.

   - WPA/WPA2/CCKM
   - WPA/WPA2 Passphrase
   - 802.1x
   - Pre-Shared Key (Static WEP)
   - None

WPA/WPA2	Enables the use of Wi-Fi Protected Access (WPA). Choosing WPA/WPA2 opens the WPA/WPA2 EAP drop-down menu. The options include: ● EAP-FAST ● EAP-TLS ● EAP-TTLS ● EAP-SIM ● PEAP (EAP-GTC) ● PEAP (EAP-MSCHAP V2) ● LEAP
WPA/WPA2 Passphrase	Enables WPA/WPA2 Passphrase security. Click on the Configure button and fill in the WPA/WPA2 Passphrase.
802.1x	Enables 802.1x security. This option requires IT administration. Choosing 802.1x opens the 802.1x EAP type drop-down menu. The options include: ● EAP-FAST ● EAP-TLS ● EAP-TTLS ● EAP-SIM ● PEAP (EAP-GTC) ● PEAP (EAP-MSCHAP V2) ● LEAP
Pre-Shared Key (Static WEP)	Enables the use of pre-shared keys that are defined on both the access point and the station. To define pre-shared encryption keys, choose the Pre-Shared Key radio button and click the Configure button to fill in the Define Pre-Shared Keys window.

None	No security (not recommended).
Allow Association to Mixed Cells	Check this check box if the access point with which the client adapter is to associate has WEP set to Optional and WEP is enabled on the client adapter. Otherwise, the client is unable to establish a connection with the access point.
Limit Time for Finding Domain Controller To	Check this check box and enter the number of seconds (up to 300) after which the authentication process times out when trying to find the domain controller. Entering zero is like unchecking this check box, which means no time limit is imposed for finding the domain controller. Note: The authentication process times out whenever the authentication timer times out or the time for finding the domain controller is reached.
Group Policy Delay	Specify how much time elapses before the Windows logon process starts group policy. Group policy is a Windows feature used by administrators to specify configuration options for groups of users. The objective is to delay the start of Group Policy until wireless network authentication occurs. Valid ranges are from 0 to 65535 seconds. The value that you set goes into effect after you reboot your computer with this profile set as the active profile. This drop-down menu is active only if you chose EAP-based authentication.

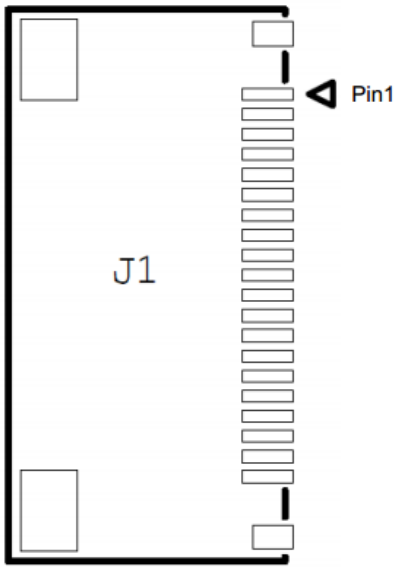
5. Product Specifications

Product Name：WLAN/BT Module
Brand Name：Wistron NeWeb Corporation
Model Name：DHUR-SY63

Item	Content
Frequency range	BT: 2402~2480MHz WLAN: 2412~2462MHz 5.15~5.25GHz 5.47~5.725GHz 5.725~5.850GHz
Channel spacing	BT/BLE: 1MHz/2MHz WLAN: 5MHz for 2.4G 20MHz for 5.0G
Modulation technology	BT: GFSK, π/4 – DQPSK, 8DPSK WLAN : DSSS : CCK,DQPSK,DBPSK OFDM :BPSK,QPSK,16QAM,64QAM,256QAM
Data Rate	BT: 1/2/3Mbps, BLE: 1Mbps 802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: 20MHz: MCS0~MCS7 40MHz: MCS0~MCS7 802.11ac VHT20: MCS0~MCS8 VHT40: MCS0~MCS9 VHT80: MCS0~MCS9
Host interface	USB 2.0
Operation voltage	3.3V
Operation temperature	-10^{o} ~ 60^{o}C
Antenna Type	PCB printed antenna

Antenna gain	
Antenna peak gain	• WiFi Antenna : 1.58dBi for 2.4Ghz , 4.35dBi for 5GHz • BT Antenna : -3.59dBi

		2400	2450	2500	Avg.	5200	5350	5500	5725	5800	Avg.
ANT 0 free space	Eff.	21%	43%	44%	36%	46%	51%	55%	65%	67%	57%
	Eff. dB	-6.68	-3.70	-3.54		-3.41	-2.89	-2.63	-1.87	-1.76	
	Peak Gain	-0.69	1.58	0.31	0.40	2.43	3.40	3.44	4.35	4.26	3.58
		2400	2450	2500	Avg.	5200	5350	5500	5725	5800	Avg.
ANT 1 free space	Eff.	24%	47%	46%	39%	49%	56%	59%	64%	66%	59%
	Eff. dB	-6.24	-3.31	-3.42		-3.05	-2.56	-2.32	-1.91	-1.80	
	Peak Gain	-0.34	1.55	-0.21	0.33	2.58	2.55	2.42	2.51	2.65	2.54
		2400	2450	2500	Avg.						
BT free space	Eff.	24%	13%	15%	17%						
	Eff. dB	-6.18	-8.88	-8.13							
	Peak Gain	-3.59	-6.48	-4.74	-4.94						



Pin number	Pin name	Pin Type	Description
1	GND	GND	GND
2	GND	GND	GND
3	RST_L	I	Reset, active low
4	WOW_L	O	Wake up on WLAN, active low
5	GND	GND	GND
6	GND	GND	GND
7	VDD33	DC power	3.3V power supply
8	VDD33	DC power	3.3V power supply
9	VDD33	DC power	3.3V power supply
10	VDD33	DC power	3.3V power supply
11	VDD33	DC power	3.3V power supply
12	VDD33	DC power	3.3V power supply
13	VDD33	DC power	3.3V power supply
14	GND	GND	GND
15	GND	GND	GND
16	GND	GND	GND
17	USB_DP	I/O	USB differential plus, D+
18	USB_DM	I/O	USB differential minus, D-
19	GND	GND	GND
20	GND	GND	GND