

WRG-N44M

Wireless Module

Manual

SAMSUNG ELECTRONICS Co., Ltd.

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1 Introduction

This document is manual for WRG-N44M Wireless Module

2 Wireless Module

We can control Wireless Module via External Controller PCB including digital appliance (for example, Air conditioner, Washer, Dryer, Refrigerator, Dryer, Oven)

Wireless operation is possible by using internal chip (2.4 GHz IEEE802.11)

2.1 General

General	
Model	Wireless Module
P/N	WRG-N44M
Host Interface	UART
Communication	IEEE 802.11 b/g/n20/n40
Accessories	Case
MCU	RTL8196C
RF IC	RTL8188
Antenna Type	PIFA

2.2 Electrical

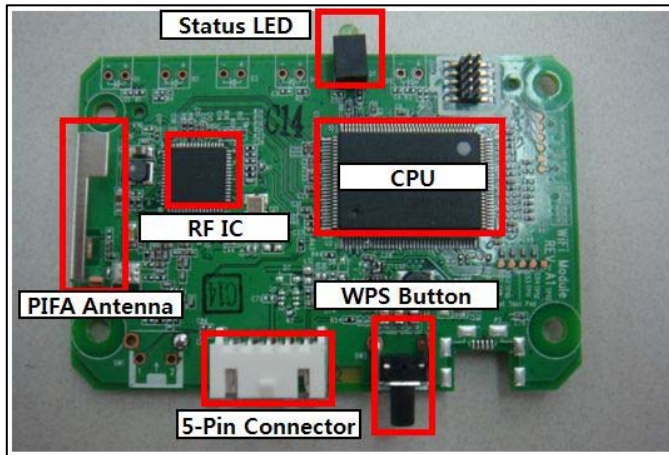
Electrical	
Voltage Range	DC 3.3 or 5V
Crystal Input Clock	40MHz

2.3 Mechanical

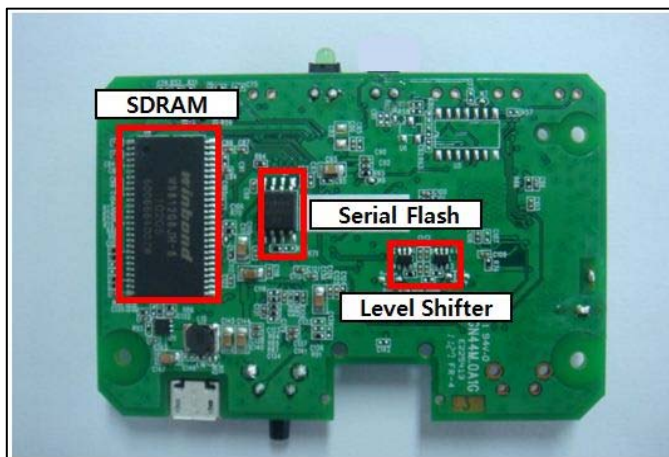
Mechanical	
Dimension (mm)	72.0(W) X 48.0(H) X 1.6(D)

2.4 Hardware Configuration

Top View



Bottom View



5-Pin Connector

1	—	UART TX
2	—	UART RX
3	—	DC 5V
4	—	GND
5	—	nRESET

Status LED: WiFi Connection Indicator (On/Off)

3.3 Operating Frequency & S Parameter

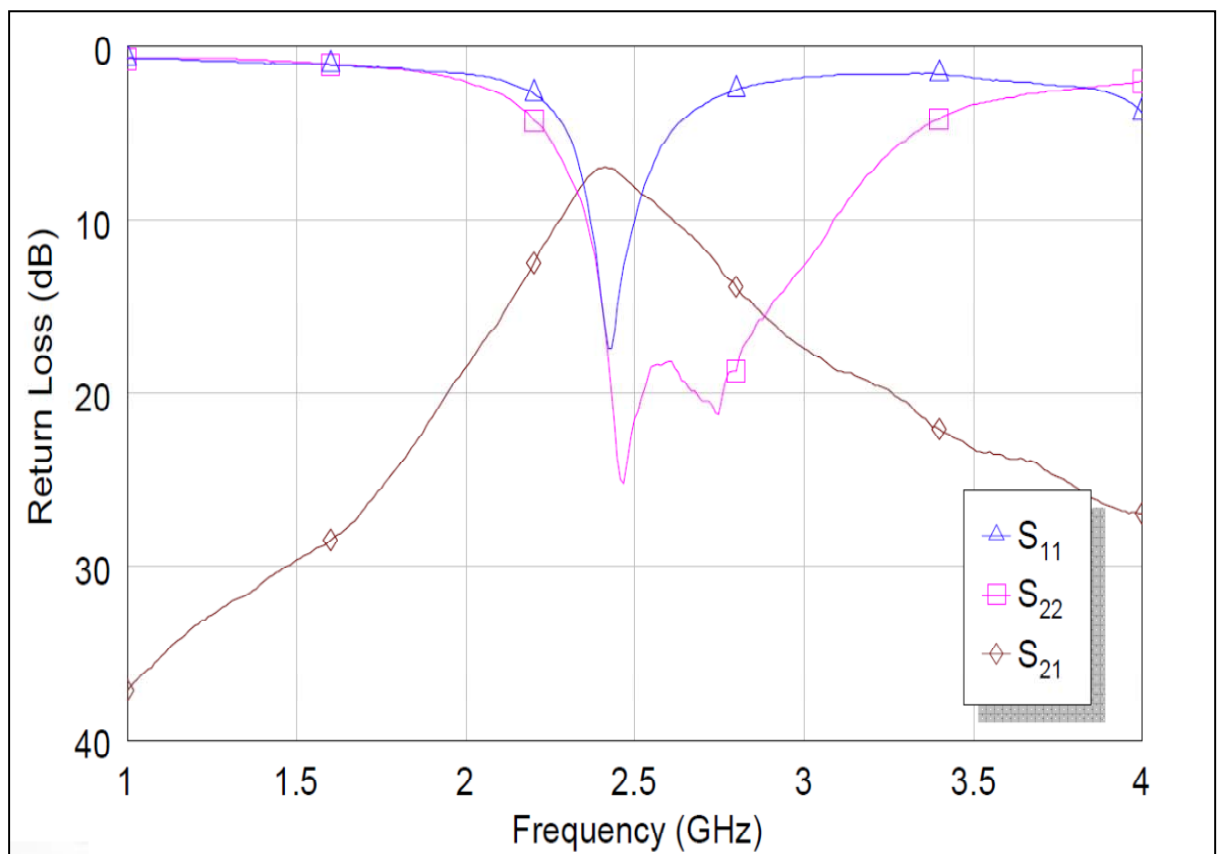
- Operating Frequency : 2.45 GHz

- S Parameter

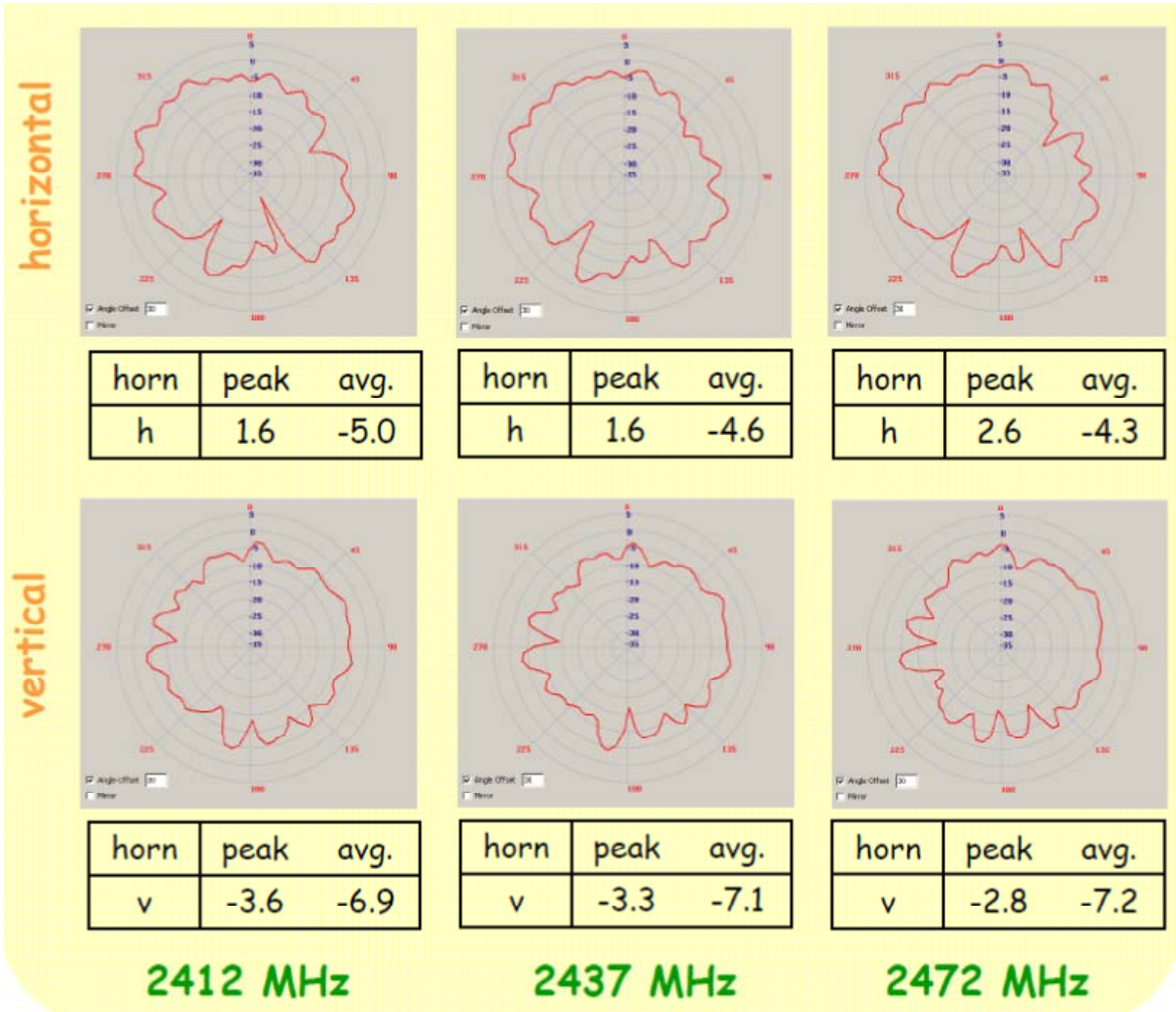
$BW_1 = 140 \text{ MHz}$ (2.36~2.5 GHz) at 10 dB RL

$BW_2 = 740 \text{ MHz}$ (2.35~3.09 GHz) at 10 dB RL

$S_{21} = -7.25 \text{ dB}$ at 2.45 GHz



3.4 Antenna Pattern and Gain



4 Regulatory Notice

4.1 United States (FCC Notice)

FCC ID: A3LWRGN44M

In accordance with FCC Part 15, the A3LWRGN44M is listed as a Modular Transmitter Device.

FCC CAUTION:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of FCC Rules. Operation is Subject to following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received including interference that cause undesired operation.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

FCC STATEMENT:

This equipment has been tested and found to comply within 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 or more 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 different circuit from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

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 a minimum distance of 20cm between the radiator and your body. This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of 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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains **FCC ID: A3LWRGN44M** ". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.

4.2 Canada (IC Notice)

IC: 649E-WRGN44M

The term "IC" before the radio certification number only signifies that Industry Canada technical specifications were met. 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.

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

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

IC RADIATION EXPOSURE STATEMENT:

This equipment complies with IC RSS-102 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 and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains **IC : 649E-WRGN44M** ".

4.3 Installation Procedure

1. Be sure to use the proper antistatic handling techniques.
2. Insert the module into the case and fix it by bracket.

Side view



Top view

