본 제품은 LG 환경표준에 지정된 유해물질을 사용하지 않습니다.
This part should not contain any hazardous substances which are specified in LG Eco-Standard.

APPROVAL

Arcadyan Part No : WN7111BW-HF-19
LGE Part No : EBR858719
Model Name : LCW-008
Date : 2019. 09. 26

承認 (APPROVED BY)		
Drawn by	Checked by	Issued by
JH Park	KJ Hwang	Bill Chang
2019. 09. 26.		

Please return 1 copy after your receipt.

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7. Electrical Specifications

1. Introduction

WN7111BW-HF-19 is IEEE 802.11n compliant while maintaining full backwards Compatibility with the IEEE802.11b and 802.11g standards. It utilizes advanced SISO (Single Input Single Output) technology to deliver incredible Speed and range.

The wireless Network adapter provide better performance than existing 802.11g technology. Upgrading to wireless 11n network provides an excellent solution for Sharing an Internet connection and file such as video, music, photos and documents.

WN7111BW-HF-19 is based on Realtek RTL8711AM solution.

- IEEE 802.11 b/g/n_HT20_HT40 compliant
- Wireless speed up to 150Mbps
- Size : 48.0mm x 20.0mm x 11.4 mm
- Antenna type : PCB Printed antenna
- Host Interface : UART
- RoHS Compliant

2. Ordering Information

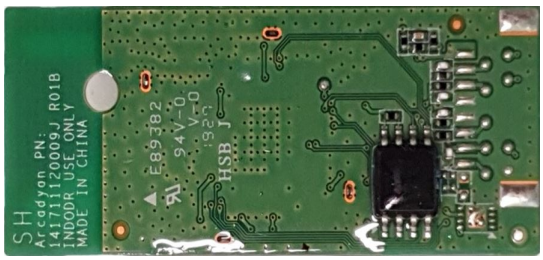
Model	Description
WN7111BW-HF-19 LCW-008	802.11 b/g/n_HT20_HT40 Single Band 1T1R

3. Hardware Description

The WN7111BW-HF-19 adapter provides 150Mbps connections.

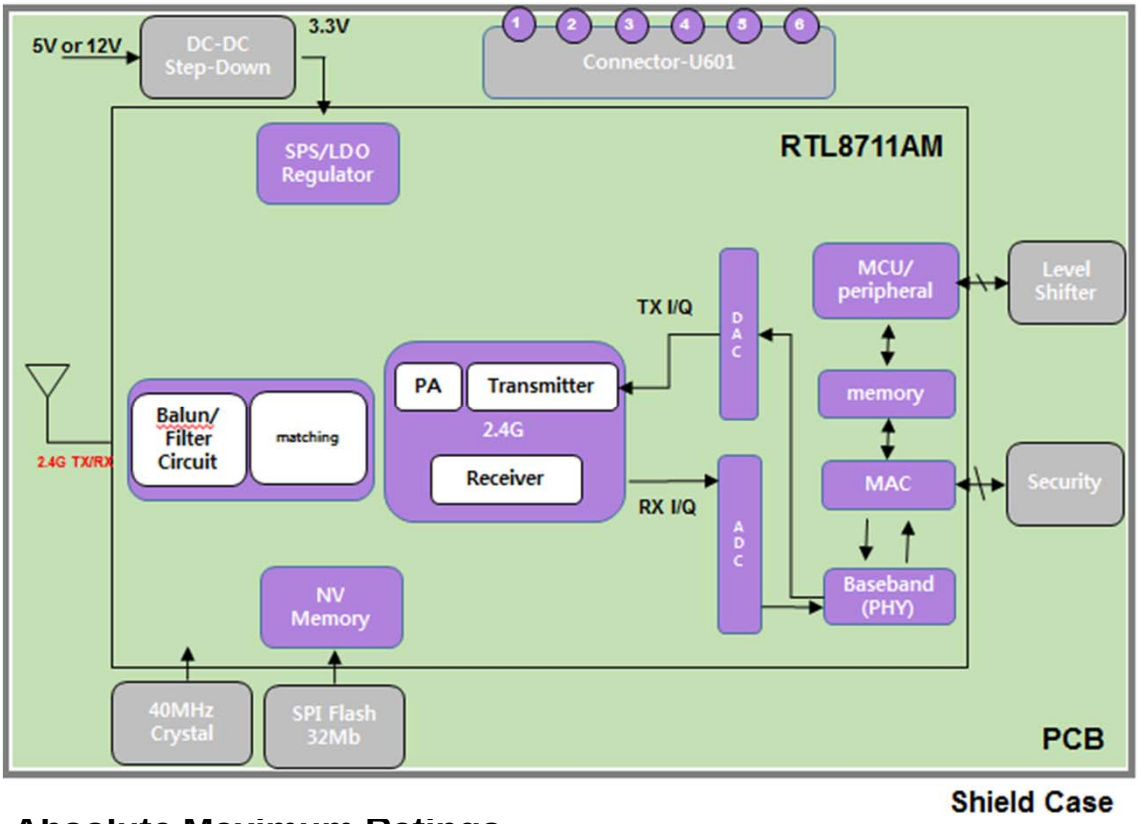
It is fully compliant with the specification of the IEEE802.11b/g/n standards.

Top view



Bottom view

4. Block Diagram



5. Absolute Maximum Ratings

Caution : The specifications in Table 1 define levels at which permanent damage to the device can occur. Function operation is not guaranteed under these conditions. Operating at absolute maximum conditions for extend periods can adversely affect the long-term reliability of the device.

Parameter	Min	Max	Unit
Storage Temperature	-20	+80	℃
Storage Humidity (40℃)	-	90	%

< Table 1 >

. Other conditions

1) Do not use or store modules in the corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the like are contained.
   Also, avoid exposure to moisture.
2) Store the modules where the temperature
   and relative humidity do not exceed 5 to 40℃ and 20 to 60%.
3) Assemble the modules within 6 months.
   Check the soldering ability in case of 6 months over.

6. Operating Conditions

Parameter	Min	Typ	Max	Unit
Ambient Temperature	0	-	60	℃
Ambient Humidity (40℃)	-	-	85	%
Supply Voltage	4.5	5	5.5	Vdc
Supply Voltage	10.8	12	13.2	Vdc

7. Standard Test Conditions

The Test for electrical specification shall be performed under the following condition
Otherwise this following conditions, not guaranteed this performance.

7-1. Ambient condition

Temperature	25 ± 5℃
Humidity	65 ± 5%

7-2. Power supply voltages

Input power	Supply Voltage
VDD_5V	4.5 ~ 5.5V
VDD_12V	10.8 ~ 13.2V

7-3. Current consumption

Current Consumption	Min.	Typ.	Max.	Unit
TX Mode	-	220	270	mA
RX Mode (MCS7 HT20)	-	60	100	

Note 1 : This figure is the RMS(root mean square)
Value

Current Consumption	Min.	Typ.	Max.	Unit
TX Mode	-	280	450	mA

Note 2 : This figure is the Peak Value.

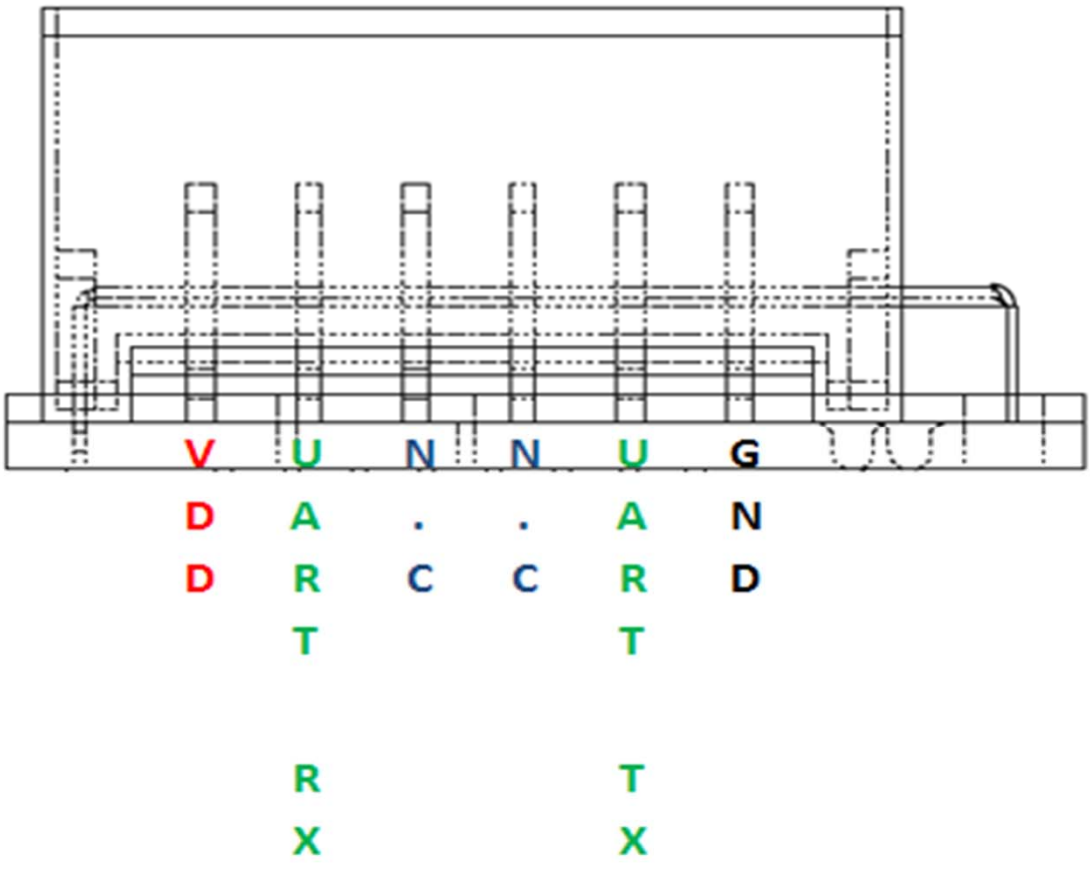
7-4. ESD Information

Human Body Model (HBM)	Min.	Max.	Unit
Contact	-	±2	kV
Air	-	±10	

Note 1 : IEC 61000-4-2 (150pF, 330R)

9. Pin Description

Pin No.	Pin Name	I/O	Pin Description
1	VDD	I	Power Supply 5V or 12V
2	UART RX	I	UART Serial Input
3	N.C	-	Not connected
4	N.C	-	Not connected
5	UART TX	O	UART Serial Output
6	GND	I	Ground



10. Mechanical Characteristics

1) Outline view

Item	Test Conditions
Assembly	No defects of wiring, soldering and assembling
Appearance	No dirt, rust, corrosion or foreign material

2) Appearance structure

Item	Test Conditions
Dimension	As assembly drawing
Mounting	As assembly drawing
Weight	4.5g

FCC/ISED statement

<FCC Rule 15.19>
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.

<FCC Rule 15.105>
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 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 circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

<FCC Rule 15.21>
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

*OEM integrators should provide the statement <FCC Rule 15.19> and <FCC Rule 15.21> to end users in their end-product manuals.

Regulatory notice to host manufacturer according to KDB 996369 D03 OEM Manual>

List of applicable FCC rules

This module has been granted modular approval as below listed FCC rule parts.

- FCC Rule parts 15C(15.247)

Summarize the specific operational use conditions

The OEM integrator should use equivalent antennas which is the same type and equal or less gain then an antenna listed in this instruction manual.

RF exposure considerations

The module has been certified for integration into products only by OEM integrators under the following condition:

- The antenna(s) must be installed such that a minimum separation distance of at least 20 cm is maintained between the radiator (antenna) and all persons at all times.
- The transmitter module must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.
- Mobile use

As long as the three conditions above are met, further transmitter testing will not be required. OEM integrators should provide the minimum separation distance to end users in their end-product manuals.

Antennas list

This module is certified with the following integrated antenna.

- Type: PCB Printed Antenna (Peak gain (dBi): 2.5 dBi)

Any new antenna type, higher gain than listed antenna should be met the requirements of FCC rule 15.203 and 2.1043 as permissive change procedure.

Label and compliance information

End Product Labeling

The module is labeled with its own FCC ID and IC Certification Number. If the FCC ID and IC Certification Number are not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. In that case, the final end product must be labeled in a visible area with the following:
“Contains FCC ID: BEJ-LCW008”
“Contains IC: 2703N-LCW008”

Information on test modes and additional testing requirements

OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, additional transmitter in the host, etc.).

Additional testing, Part 15 Subpart B disclaimer

The final host product also requires Part 15 subpart B compliance testing with the modular transmitter installed to be properly authorized for operation as a Part 15 digital device.

Étiquetage du produit final (IC)

Le module LCW-008 est étiqueté avec sa propre identification FCC et son propre numéro de certification IC. Si l'identification FCC et le numéro de certification IC ne sont pas visibles lorsque le module est installé à l'intérieur d'un autre dispositif, la partie externe du dispositif dans lequel le module est installé devra également présenter une étiquette faisant référence au module inclus. Dans ce cas, le produit final devra être étiqueté sur une zone visible avec les informations suivantes :

- Contient module émetteur identification FCC ID: BEJ-LCW008
- Contient module émetteur IC : 2703N-LCW008

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (7.8 inches) between the antenna and your body.

L'antenne (ou les antennes) doit être installée de façon à maintenir à tout instant une distance minimum de au moins 20 cm entre la source de radiation (l'antenne) et toute personne physique.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

NOTA: EL FABRICANTE NO ES RESPONSABLE DE NINGUNA INTERFERENCIA DE RADIO O TV CAUSADA POR MODIFICACIONES NO AUTORIZADAS A ESTE EQUIPO. DICHAS MODIFICACIONES PODRÍAN ANULAR LA AUTORIDAD DEL USUARIO PARA OPERAR EL EQUIPO.

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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.