

Manual

说明书

Model:**AW.S905D3.03**

REVISION HISTORY


VERSION	DATE	BOARD ID	PAGE	DESCRIPTION	AUTHOR
V0	2021.02.23	AW.S905D3.03 (N) A21023	All	First Issued.	Yve
V1	2021.07.07	AW.S905D3.03 (N) B21203	1-4,9	Modified standard configuration,Board Picture,Interface Definition,Mechanical dimension.	Yve

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1. STANDARD CONFIGURATION (标准配置)

下表为我们主推的标准配置:

标准配置	无 HDMI OUT, Micro USB
FUNCTIONS	【03_A2】无 HDMI OUT, Micro USB
Notes	--
SIDE VIEW	

OPTIONAL FUNCTION	<p>CN3 外挂 HDMI OUT+USB3.0*1(FFC 41PIN);</p> <p>内置 WIFI 模块 (2.4G & 5G 双频双天线, SKI.WB668BS.3) & 蓝牙模块, 内置 WIFI 模块 (2.4G & 5G 双频单天线, SKI.WB8821CU.1) ;</p> <p>内置 WIFI 模块 (2.4G & 5G 双频双天线, SKI.WB668BS.3) & 蓝牙模块;</p> <p>内置 WIFI 模块 (2.4G & 5G 双频单天线, SKI.WB8821CU.1)</p> <p>内置 WIFI 模块 (2.4G & 5G 双频双天线, SKI.WB668BS.3) & 蓝牙模块, 内置 WIFI 模块 (2.4G & 5G 双频单天线, SKI.WB800D.3) & 蓝牙模块</p> <p>(以上 WIFI 只能选其一)</p>
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备注: 如以上表格不包含您需要的配置, 请单独向我司销售人员进行申请。

Note: If the configurations above can't meet your demand, please apply to our sales stuff.

2. BOARD PICTURE (板卡外观图)

Pictures are for reference only, specific to prevail in kind.

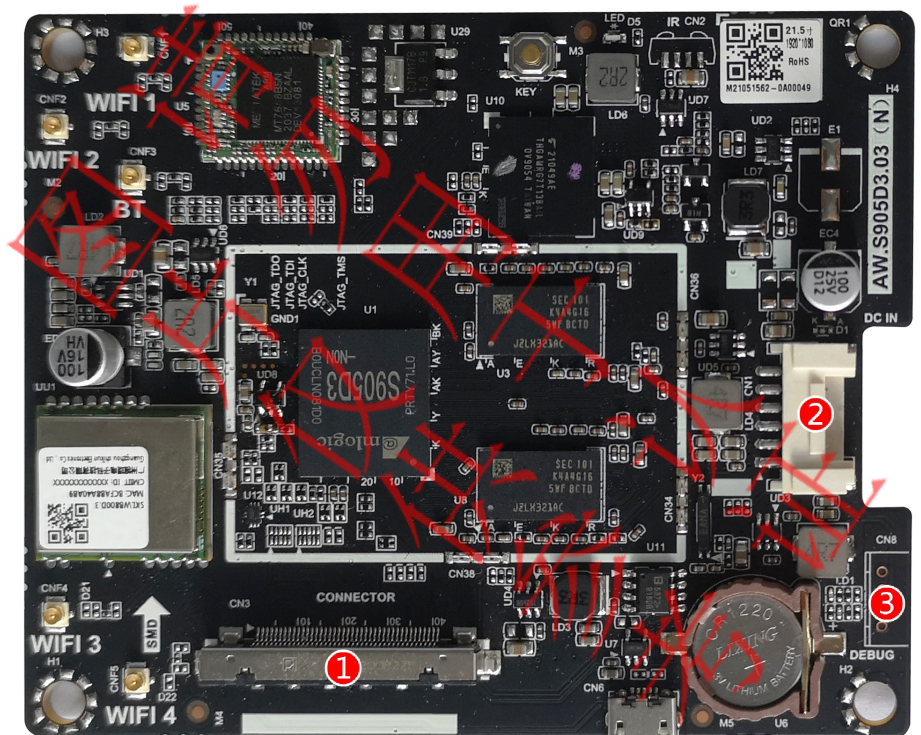
The optional connectors and functions are marked with “*”.

以下图片仅供参考，请以【结构图】或【实物】为准。

可选的接口或者功能都以“*”标示。

尺寸：98.5mm(L)*80mm(W)*1.6mm(H) (H 为 PCB 厚度)

No.	Position	Description
1	CN3	CONNECTOR
2	CN1	DC IN
3	*CN8	DEBUG



3. FEATURES (特性说明)

MAIN CHIPSET 主芯片	S905D3-N0N
OSD LANGUAGE OSD 语言	English,Chinese
USB FUNCTION USB 功能	software upgrade 软件升级
Note: Licenses involved in specifications above are supposed to be obtained by customers themselves. 注意: 以上规格涉及 License 部分需要客户自己获取。	

3.1 CRITICAL MATERIALS of TV Part (TV 部分关键物料清单)

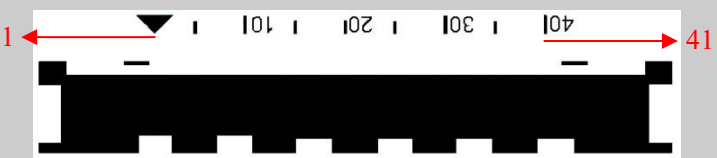
The table is for reference only, specific to prevail in kind. 此表仅供参考，请以实物为准。

NAME 物料名称		TYPE 型号	BRAND 品牌	BACKUP 备用型号	BACKUP 备用品牌
FLASH	16G Byte	KLMAG1JETD-B041	SAMSUNG	--	--
		THGAMRG7T13BAIL	Kioxia		
DDR	2G Byte	K4A4G165WF-BCTD	Samsung	--	--
SPXO		SPXO,32.768KHz,±20ppm, 12.5pF,SMD7015,SMD, JB32K768C12.5A2	EPSON	--	--
		Crystal,24MHz,±10ppm, 12pF,SMD3225,SMD, CF4024M00012T2115065	JWT	--	--

4. INTERFACE DEFINITION (接口定义)

The optional connectors and terminals are marked with "*".标“*”的为可选。

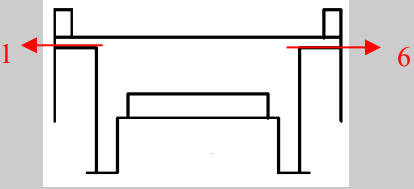
◆ *CN3(41PIN/0.50): CONNECTOR (外挂接口)



NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	WLST_DET	Detect
3	PWR_STATUS	Power status
4	PS_ON	Power On/Off
5	UART3_RX	UART RX
6	UART3_TX	UART TX
7	POWER_IN	Power in
8	POWER_IN	Power in


9	POWER_IN	Power in
10	POWER_IN	Power in
11	GND	Ground
12	GND	Ground
13	HDMI_A_HPD	HDMI Hot plug
14	HDMI_A_5V	+5V power supply
15	GND	Ground
16	HDMI_A_SDA	HDMI I2C data signal
17	HDMI_A_SCL	HDMI I2C clock signal
18	USB_S4	USB_S4
19	HDMI_CEC	HDMI CEC
20	HDMI_A_CLK_N	HDMI Clock- Signal
21	GND	Ground
22	HDMI_A_CLK_P	HDMI Clock+ Signal
23	HDMI_A_0N	HDMI 0- Signal
24	GND	Ground
25	HDMI_A_0P	HDMI 0+ Signal
26	HDMI_A_1N	HDMI 1- Signal
27	GND	Ground
28	HDMI_A_1P	HDMI 1+ Signal
29	HDMI_A_2N	HDMI 2- Signal
30	GND	Ground
31	HOST1_A_2P	HDMI 2+ Signal
32	GND	Ground
33	HOST1_DM	HOST data-
34	HOAT1_DP	HOST data+
35	GND	Ground
36	USB3.0_TXN	USB3.0 TX-
37	USB3.0_TXP	USB3.0 TX+
38	GND	Ground
39	USB3.0_RXN	USB3.0 RX-
40	USB3.0_RXP	USB3.0 RX+
41	GND	Ground

◆ **CN1(6PIN/2.0): DC IN CONNECTOR (供电输入接口)**



NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	GND	
3	GND	
4	POWER_IN	Power in
5	POWER_IN	
6	POWER_IN	

◆ ***CN8(4PIN/2.0): DEBUG CONNECTOR (DEBUG 接口)**



NO.	SYMBOL	DESCRIPTION
1	GND	Ground
2	TX	UART TX
3	RX	UART RX
4	NC	No Connection

5. FUSE PROTECTION (保险丝保护)

To protect the power module, the Fuse will be disconnected to cut off the power supply when the AC input current exceeds the rated current of fuse.

当输入交流电流超过保险丝的额定工作电流时，电源保险丝将断开，关闭电源供应以保护电源模块。

6. INTERNATIONAL STANDARDS (国际标准)

6.1 SAFETY (安规)

Conforming:

UL60950/UL60065;

EN60950-1/EN60065;

GB4943-2011/ GB8898-2011;

IEC 60950/IEC 60065.

6.2 HI-POT AND INSULATION RESISTANCE (耐压性能和绝缘阻抗)

HI-POT (耐压性能)

Primary to secondary (一次侧对二次侧): 3000VAC, 10mA for 60s.

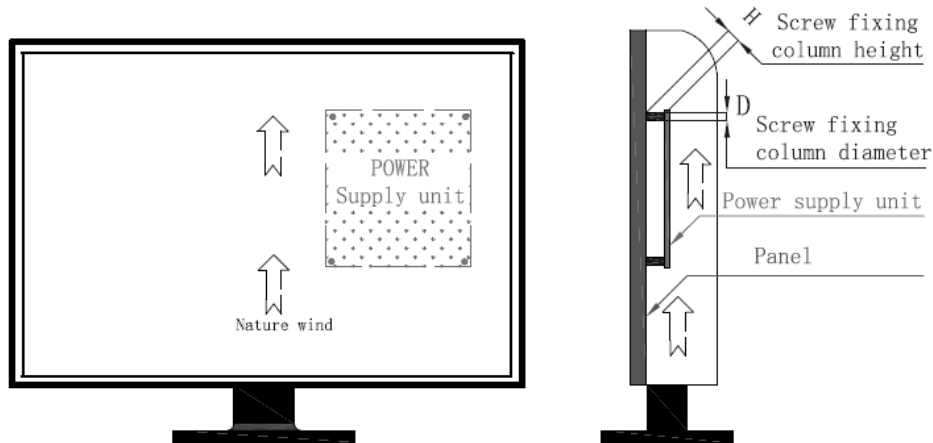
Insulation resistance (绝缘阻抗)

between primary and secondary (一次侧与二次侧之间): 500VDC/60s, $\geq 50M\Omega$.

7. CONFIGURATION & GENERAL PRECAUTIONS (使用注意事项)

- Relative humidity: $\leq 80\%$.
- 相对湿度: $\leq 80\%$ 。
- Storage temperature: $-10\sim 60^{\circ}\text{C}$.
- 存储温度: $-10\sim 60^{\circ}\text{C}$ 。
- System Operating: $0\sim 40^{\circ}\text{C}$.
- 系统工作温度: $0\sim 40^{\circ}\text{C}$ 。
- Protect the board from static electricity in case of damage to the IC.
- 请使板卡远离静电。
- Keep the board away from conductor when it is working.
- 请确保板卡工作时远离导体。
- Do not press the PCBA during transportation or placement.
- 在运输、放置时, 请勿重压板卡。
- Do not bend or deform the board during the whole machine assembling, especially when connecting the cable.
- 在整机组装过程, 特别是接插线时, 请勿使板卡弯折变形。
- Do not plug or unplug the cable while the board is working.
- 板卡工作时, 请勿插拔线材。
- Mount the board considering the heat dissipation direction of your TV set to avoid abnormal system work because of poor heat dissipation.
- 请注意结合整机散热方向安装板卡, 避免散热不佳引起系统工作异常。
- Clean the board with soft dry cloth when it's dirty.
- 如果板卡脏了, 请用干布擦拭。
- Don't power on before panel is correctly connected.
- 正确接好驱屏线前请勿接通电源。
- The whole machine certification performance will be subject to the impact of the whole machine, must use the whole machine to test and confirm.
- 整机认证性能会受整机匹配的影响, 必须使用整机进行测试确认。
- When using the I2C interface to communicate with the outside, please confirm the matching of the pull up resistance and the series resistance with CVTE hardware engineer.

8. MOUNT PRECAUTIONS (组装注意事项)



Note1: If there is mylar under PCB bottom, $H \geq 5$ mm; If there is no mylar under PCB bottom, $H \geq 9$ mm.

如果板卡带麦拉片，则 $H \geq 5$ mm；如果板卡不带麦拉片，则 $H \geq 9$ mm。

Note2: The diameter of D should be less than 8mm. Use M3 screw to mount the power supply unit on the screw fixing column. The maximum torque force is 0.4N-M.

D 的直径须小于 8mm，将电源锁在螺丝柱上需使用 M3 的螺丝。最大扭矩为 0.4N-M。

Note3: The Power supply unit is designed without the case. Pay attention to ESD protection at any time.

因为本产品为无外壳之设计，故在任何时候均应注意静电防护。

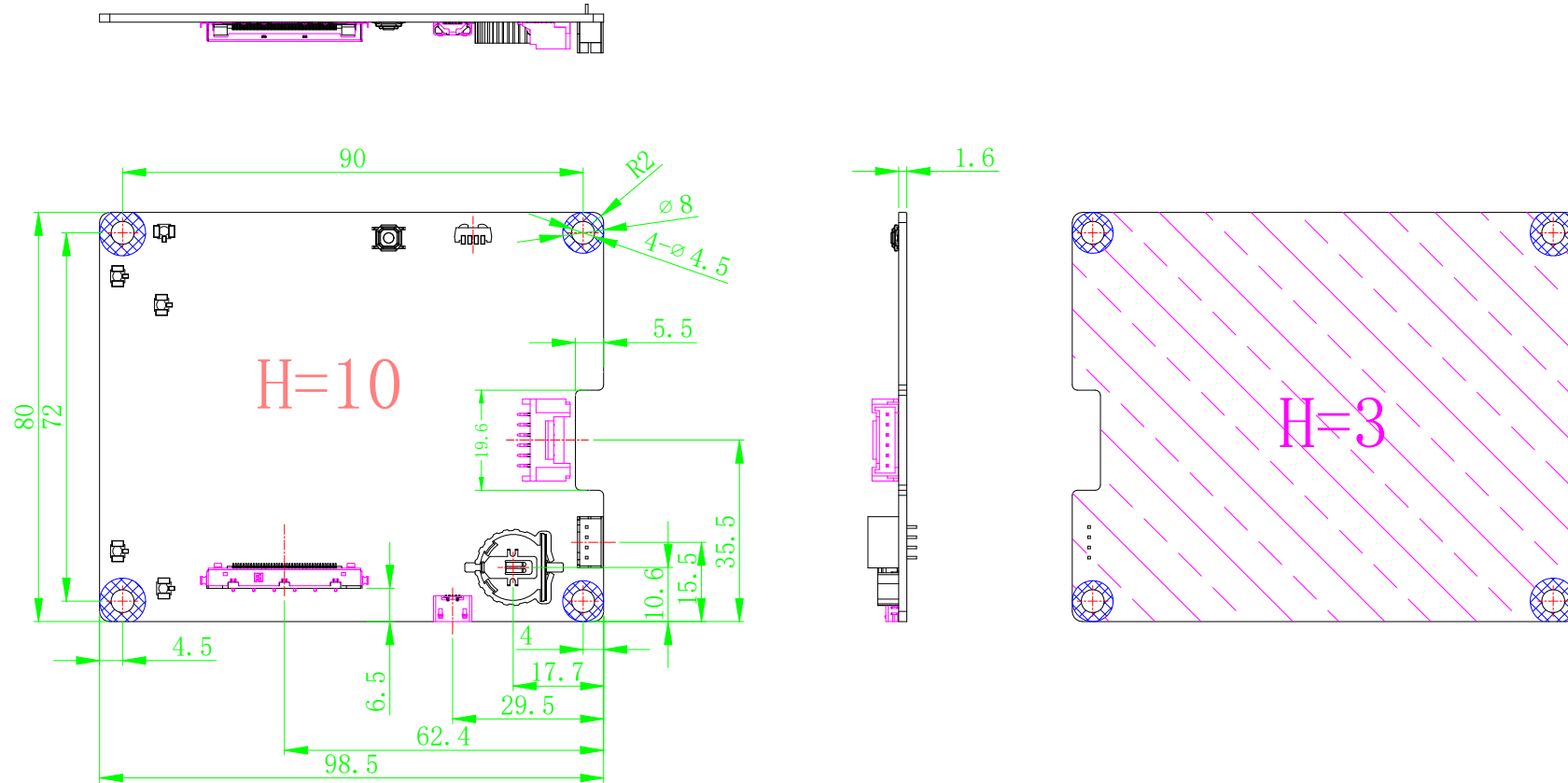
Note4: Speaker line must be twisted.

喇叭线必须使用双绞方式。

Note5: Speaker line cannot be parallel to the AC line, if they are parallel to each other, the distance should not be less than 8cm.

喇叭线和整机 AC 线不可以平行走线，如果平行走线，距离不可小于 8cm。

9. MECHANICAL DIMENSION (结构尺寸图)



10. NOTICE REGARDING TV MEDIA FORMAT AND INTERFACE TECHNOLOGY (TV 媒体格式与接口技术说明)

概述

本文档用于描述 TV 产品可能涉及的媒体格式和接口技术。

媒体格式		接口技术及其他	
Dolby Digital Decoder	MPEG2/MPEG4	HDMI	Hbbtv2.0
Dolby Digital Plus Decoder	AMR-NB	HDCP	Netflix
Dolby MS11	AMR-WB	Wi-Fi	Freeview Play
Dolby MS12	DRA	USB	NTFS
Dolby Atmos	AAC/HEAAC	MHL	Seraphic Open Browser
Dolby Vision	H.264	Bluetooth	Seraphic TV Portal
DTS Sound	H.265	NFC	—
DTS TruSurround	DivX	DVB-T2	—
DTS HD	RMVB	DVB-S2x	—
DTS 2.0+Digital Out	WMA	ATSC	—
DTS Express 5.1	WMA Pro	PlayReady	—
DTS Studio Sound	dbx-tv	MSS	—
DTS Studio Sound II	—	Widevine	—

说明

如贵司定制/采购的液晶显示主板中包含在整机上支持上述媒体格式与接口技术的硬件（例如主控芯片、端子接口等）和/或软件，则由于该等媒体格式与接口技术中可能涉及第三方技术及 IP，视源特进行如下提示：

1. 贵司向视源支付的合作款项中不包含整机使用特定媒体格式与接口技术时应向权利人支付的授权许可费用，如权利人提出要求，贵司应自行向权利人取得有效许可并付费；
2. 如贵司需要取消对应的媒体格式或接口技术，贵司应在确认板卡规格或支付货款前书面通知视源；
3. 如贵司定制/采购的液晶显示主板不包含在整机上支持媒体格式及接口技术的硬件或软件（全部不支持或部分不支持），对于不支持的部分，则本说明对贵司不适用；
4. 媒体格式与接口技术涉及的硬件、软件及技术均由第三方提供，视源会不定期更新本说明；如贵司发现有疏漏，还请告知我们。感谢！

Introduction

This document is used to specify media formats, interface technologies and others that may be involved in TV products.

Media Format		Interface Technology & Others	
Dolby Digital Decoder	MPEG2 / MPEG4	HDMI	Hbbtv2.0
Dolby Digital Plus Decoder	AMR-NB	HDCP	Netflix
Dolby MS11	AMR-WB	Wi-Fi	Freeview Play
Dolby MS12	DRA	USB	NTFS

Dolby Atmos	AAC/HEAAC	MHL	Seraphic Open Browser
Dolby Vision	H.264	Bluetooth	Seraphic TV Portal
DTS Sound	H.265	NFC	-
DTS TruSurround	DivX	DVB-T2	-
DTS HD	RMVB	DVB-S2x	-
DTS 2.0+Digital Out	WMA	ATSC	-
DTS Express 5.1	WMA Pro	PlayReady	-
DTS Studio Sound	dbx-tv	MSS	-
DTS Studio Sound II	-	Widevine	-

Notice

In the event the LCD TV Driver Boards (“Boards”) purchased or customized by your good company include any hardware(e.g. TV master chip, output connector) and/or software that support the above mentioned media formats, interface technologies & others which may involve third party technologies or intellectual properties, your company is hereby kindly reminded as follows:

1. The product price under the sale contracts between us does not include any royalties, licensing fees or expenses payable to the IP right holders for acquiring the right to use the third party technologies or the license of the third party’s intellectual properties which may be involved due to the Boards’ and relating TV sets’ supporting of the above mentioned media formats, interface technologies & others. If the IP right holders so request, you shall obtain valid license from the right holders and make payment at your own cost for such license.
2. If your company requests to reduce or cancel the media formats or interface technologies & others supported by the Boards, you shall, upon your confirmation of the Boards’ specifications, or upon payment of the contract price, whichever is earlier, notice us such requests in writing.
3. In the event the “Boards” purchased or customized by your good company do not include hardware and/or software that support part or entire of the above mentioned media formats and interface technologies & others, this Notice shall not be applicable to your company with respect to the media formats and interface technologies & others that not supported by the Boards.
4. The hardware, software and technologies related to the media formats and interface technologies & others that may be involved in the Boards are all provided by third parties . We may update this Notice from time to time. If you find any omissions, please do not hesitate to let us know.

由于在本产品技术要求确认书列明的主板产品（以下简称“主板”，包括其内含的芯片）实现的或通过主板在整机上实现的功能（含专利功能）和出厂预装的软件版本均系由买方最终确认和决定，买方负责自行向相应权利人取得资质授权、确认是否允许开通、提报交易数据并缴纳相应专利许可费用。

由于我司作为主板供应商，无法获知整机产品的性能要求或规格参数，我司仅能保证供应的主板符合双方已确认的《技术要求确认书》，请贵司自行根据最终整机产品及对应主板进行调试、测试并申请认证，以确保产品符合终端销售区域的法律法规要求。

Regarding the TV mainboard Products (following referred as “the Mainboard”), the technical requirements of which are wholly listed and defined under this Letter of Confirmation for Product Technical Requirements, due to the fact that it was ultimately confirmed and determined by the buyer regarding the software programmed to the Mainboard, and the Mainboard’s features and functions (including patented features and functions, whether the features and functions are realized and practiced through the chips embodied in the Mainboard, the Mainboard itself, or through the TV sets embodying the Mainboard), the buyer shall be responsible for obtaining appropriate licenses from the relating intellectual property right holders and other right holders, acquiring appropriate permissions to use the software programmed to the Mainboard, obtaining appropriate permissions to realize and practice the relating features and functions of the Mainboard, reporting the transaction data, arranging the payment of royalties, and performing other duties and responsibilities which are necessary to use, sell, offer for sale, import or otherwise to dispose of the Mainboard with programmed software without infringing the intellectual property rights of any third party.

As our company is specialized TV mainboard supplier and unable to acquire the performance or specifications requirements of the TV sets embodying the Mainboard, we hereby guarantee that the TV mainboard products supplied by our company are in conformance with the Letter of Confirmation for Product Technical Requirements which was confirmed in writing by both parties, and your company shall be responsible for the testing, debugging, tuning of the TV sets embodying the Mainboard, application for certifying the Mainboard and the TV sets embodying the Mainboard, and performing other duties and responsibilities which are necessary for complying with the law and regulations of the countries and regions, where the Mainboard and the TV sets embodying the Mainboard were imported and sold.

FCC Statement

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.

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

NOTE: 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 important announcement

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 and 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. (if modular only test Channel 1-11)

As long as the three conditions above are met, further transmitter testing 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 cannot 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 cannot 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

The final end product must be labeled in a visible area with the following"

Contains **FCC ID: 2A54C-AWS905D303** "

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.

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual v01

2.2 List of applicable FCC rules

CFR 47 FCC PART 15 SUBPART C has been investigated. It is applicable to the modular transmitter

2.3 Specific operational use conditions

This module is stand-alone modular. If the end product will involve the Multiple simultaneously transmitting condition or different operational conditions for a stand-alone modular transmitter in a host, host manufacturer have to consult with module manufacturer for the installation method in end system.

2.4 Limited module procedures

This module is Limited modular without shielding, host manufacturer have to consult with module manufacturer for the module limiting conditions when integrate the module in the host. module manufacturer should reviews detailed test data or host designs prior to giving the host manufacturer approval.

2.5 Trace antenna designs

Not applicable

2.6 RF exposure considerations

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.

2.7 Antennas

This radio transmitter **FCC ID:2A54C-AWS905D303** has been approved by Federal Communications Commission to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

SKI.WB800D.3 Antennas information

Antenna No.	Type of antenna:	Gain of the antenna (Max.)	Frequency range:
BT	PCB Antenna	3.0dBi for 2400-2500MHz	
2.4GWIFI	PCB Antenna	3.0dBi for 2400-2500MHz	
5GWIFI	PCB Antenna	3.0dBi for 5000-6000MHz	

SKI.WB668BS.3 Antennas information

Antenna No.	Type of antenna:	Gain of the antenna (Max.)	Frequency range:
BT	PCB Antenna	3.0dBi for 2400-2500MHz;	
2.4GWIFI	PCB Antenna	3.0dBi for 2400-2500MHz for ANT 1&2	
5GWIFI	PCB Antenna	3.0dBi for 5000-6000MHz for ANT 1&2	

2.8 Label and compliance information

The final end product must be labeled in a visible area with the following" Contains FCC ID: 2A54C-AWS905D303".

2.9 Information on test modes and additional testing requirements

Host manufacturer which install this modular with limit modular approval should perform the test of radiated emission and spurious emission according to FCC part 15C:15.247&15.407 and 15.209&15.207 requirement, only if the test result comply with FCC part 15.247&15.407 and 15.209&15.207 requirement, then the host can be sold legally.

2.10 Additional testing, Part 15 Subpart B disclaimer

Host manufacturer is responsible for compliance of the host system with module installed with all other applicable requirements for the system such as Part 15 B.