

The user manual of TV's WIFI module

1. The product description

The user can achieve TV connection WIFI net, through this module and the voltage supplied by the system to the module needs to be transmitted by a voltage regulator or circuit

The module installation method is as follows: pass the large round hole of the module through the limit column of the bracket of the TV, and fix the module by the snap-fit on the bracket. Connect the external IPEX antenna to the antenna pedestal of the module

2. Basic parameters

Feature Description	Feature Description
Model	MWH653S
Product Name	WiFi/BT Module
Interface	SDIO3.0
Supply Voltage	VD33: $3.3 \pm 0.3V$, VDDIO: 1.8/3.3V
Dimension	15 (mm) *13 (mm) *2.4(mm)
Operating Temperature	-10° C to 70° C
Storage Temperature	-40° C to 80° C

3. RF output power

	Band	Limited power
WLAN	2400MHZ-2483.5MHZ	<20dBm
	5150-5350 MHz, 5470-5850MHz	
BT	2400MHZ-2483.5MHZ	<20dBm

4. The display method of Model approved code

In the factory, the model approve code is pasted on the back shell in a label.

5. FCC 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 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.

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.

CAUTION:

To comply with the limits of the Class B digital device pursuant to Part 15 of the Rules, this device is compliant with Class B limits. All peripherals must be shielded and grounded. Operation with non-certified peripherals or non-shielded cables may result in interference to radio or reception.

MODIFICATION

To assure continued compliance, Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the device.

6. FCC Module Warning Statement

2.2 List of applicable FCC rules

This module has been tested and found to comply with Part 15C, Section 15.247 & Section 15.407 requirements for Modular Approval.

2.3 Specific Operational Use Conditions- Antenna Placement Within the Host Platform

The module is tested for standalone mobile RF exposure use condition.

- The antenna must be installed such that 20cm is maintained between the antenna and users,
- The transmitter module may not be co-located with any other transmitter or antenna.

The products will be sold externally and to all consumers.

In the event that these conditions can't 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't be used on the final product. In these circumstances, the integrator will be responsible for reevaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

2.4 Limited Module Procedures

Not applicable

2.5 Trace Antenna Designs

Not applicable

2.6 RF Exposure Considerations

This device 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 Antenna Type and Gain

The following antennas have been certified for use with this module. Only antennas of the same type with equal or lower gain may also be used with this module. Other types of antennas and/or higher gain antennas may require the additional authorization for operation.

Antenna Specification list below:

Antenna Type	Gain (dBi)	Frequency Range (MHz)
FPCB Antenna	4.06 dBi	2402 - 2480
FPCB Antenna	Main: 5.24 dBi AUX: 5.18 dBi	2412 - 2462
FPCB Antenna	Main: 5.91 dBi AUX: 4.58 dBi	5150 - 5850

2.8 End Product Labeling:

This transmitter module is authorized only for use in device. The final end product must be labeled in a visible area with the following: "Contains Transmitter Module FCC ID: 2AJVQ-MWH653S" Or "Contains FCC ID: 2AJVQ-MWH653S". The grantee's FCC ID can be used only when all FCC compliance requirements are met. The end product shall bear the following 15.19 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.

2.9 Information on Test Modes and Additional Testing Requirements

The module is tested for standalone mobile RF exposure use condition. Any other usage conditions such as co-location with other transmitter(s) or being used in a portable condition will need a separate reassessment through a class II permissive change application or new certification.

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

2.10 Additional testing, Part 15 Subpart B Disclaimer

This transmitter modular is tested as a subsystem and its certification does not cover the FCC Part 15 Subpart B rules requirement applicable to the final host. The final host will still need to be reassessed for compliance to this portion of rules requirements if applicable.

As long as all 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 modular installed.

2.11 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 Manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as shown in this manual.

The host integrator must follow the integration instructions provided in this document and ensure that the composite-system end product complies with the requirements by a technical assessment or evaluation to the rules and to KDB Publication 996369.

The host integrator installing this module into their product must ensure that the final composite product complies with the requirements by a technical assessment or evaluation to the rules, including the transmitter operation and should refer to guidance in KDB 996369.

OEM/Host Manufacturer Responsibilities:

Manufacturers are ultimately responsible for the compliance of the Host and Module. The final product must be reassessed against all the essential requirements of the FCC rule such as FCC Part 15 Subpart B before it can be placed on the US market. This includes reassessing the transmitter module for compliance with the Radio and EMF essential requirements of the FCC rules. The module must not be incorporated into any other device or system without retesting for compliance as multi-radio and combined equipment.

2.12 How to Make Changes-Important Note:

In the event that these conditions can't 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't be used on the final product. In these circumstances, the integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

8. IC Statement**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 of 20cm between the radiator and your body. To satisfy IESD exterior labeling requirements, the following text must be placed on the exterior of the end product " Contains Transmitter module IC: 22470-MWH653S".

- 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 as appropriate; and
- iv、 where applicable, antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 shall be clearly indicated.

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.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
- (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC:22470-MWH653S

8.



This symbol on the product or on its packaging indicates that this product must not be disposed of with your household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

The device is restricted to indoor use only when operating in the 2400 to 2483.5 MHz、5150 to 5350 MHz、5470 to 5850MHz frequency range.

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

Manufacturer: Qingdao Intelligent & Precise Electronics Co., Ltd.

Address: 218 Qianwangang Road, Qingdao Economic & Technological Development Zone, Qingdao, China

Importers:

Hisense France SAS

Address: 9 Rue des 3 Soeurs, 93420 Villepinte, France

Hisense Iberia, S.L.U

Address: Ronda Auguste y Louis Lumiere. 23 Nave 12. Edificio Lumiere - Parque Tecnológico 46980

Paterna (Valencia) - Spain

Hisense Italia S.r.l

Address: Via Montefeltro, 6/A, 20156 MILANO

Hisense South Africa

Address: The Estuaries, Building 17 Oxbow Crescent, Century City, Cape Town, SouthAfrica