PRODUCT SPECIFICATION

JS-WI-6

Wi-Fi IEEE 802.11 a/n/ac/ax

Modules

Revision History

Version	Date	Contents of Revision Change	Preparde	Checked	Approved
V1.0	2024/7/1	New version	Asaf	David	Yossi

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1. General Description

1.1 Introduction

The JS-WI-6 is a multi-radio MCU module. The radio provides support for Wi-Fi 802.11ax in the 5-7GHz band communications. The interface of the radios is PCI express. The device are restricted to outdoor operation only.

1.2 Description

Model Name	JS-WI-6
Product Description	Support Wi-Fi/ functionalities
Host Interface	See below tables
Operating temperature	-40°C to 85°C
Storage temperature	-40°C to 95°C

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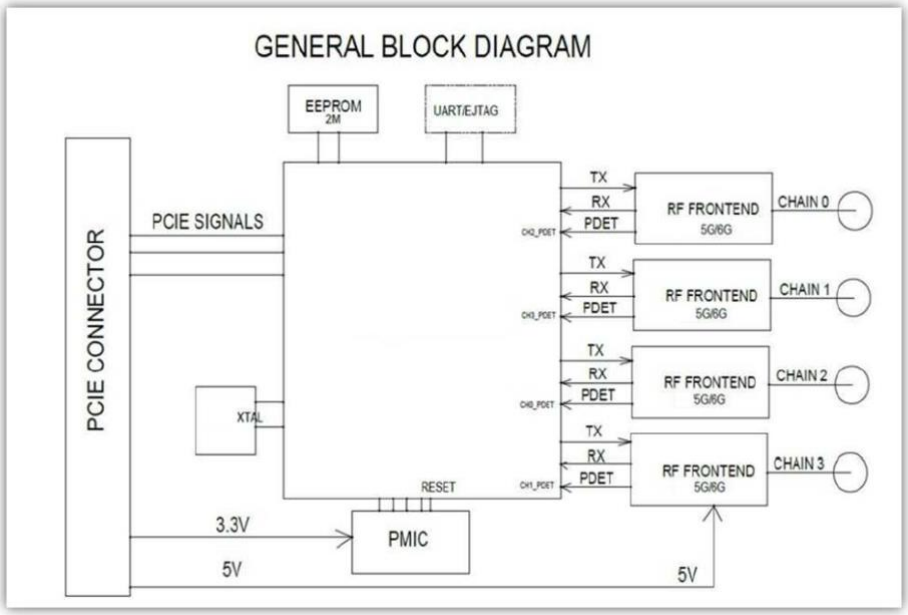
2. Block Diagram



JS-WI-6 block diagram

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4. General Specification

4.1 5GHz RF Specification

JS-WI-6 HW		
WLAN Standard	IEEE 802.11 a/n/ac/ax Wi-Fi compliant	
Frequency Range (Central freq@BW=20MHz)	5.18 GHz ~ 7.115GHz	
WIFI Features	802.11ax WIFI6, WIFI6E ready , MIMO 4x4, BW: 20,40,80,160MHz	
Test Items	Typical Value	EVM
Output Power	802.11ax /20MHz: MCS11 20dBm ± 1 dB	EVM ≤ -30dB
Receive Sensitivity SISO	(11ax,20MHz) @10% PER = -64dBm	
	(11ax,40MHz) @10% PER = -60dBm	
	(11ax,80MHz) @10% PER = -57dBm	
	(11ax,160MHz) @10% PER = -54dBm	
Maximum input level	802.11ax: -20 dBm	
Operating Temperature	-40°C to 85°C	
VCC	5V	
Host Interface	PCIE,GPIOs	

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5. Module pictures

JS-WI-6

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

Conditions on using JUGANU Ltd. regulatory approvals:
A. Customer must ensure that its product (The ” RF module”) is electrically identical to JUGANU Ltd. reference designs. Customer acknowledges that any modifications to JUGANU Ltd. reference designs may invalidate regulatory approvals in relation to the CUSTOMER Product, or may necessitate notifications to the relevant regulatory authorities.
B. Customer is responsible for ensuring that antennas used with the product are of the same type, with same or lower gains as approved and providing antenna reports to JUGANU Ltd.
C. Customer is responsible for regression testing to accommodate changes to JUGANU Ltd. reference designs, new antennas, and portable RF exposure safety testing/approvals.
D. Appropriate labels must be affixed to the CUSTOMER Product that comply with applicable regulations in all respects.
E. A user’s manual or instruction manual must be included with the customer product that contains the text as required by applicable law. Without limitation of the foregoing, an example (for illustration purposes only) of possible text to include is set forth below:

2.2 List of applicable FCC rules
FCC Part 15 Subpart E

2.3 Specific operational use conditions
Radio Technology: 5G WIFI
Operation frequency: 802.11a/n (HT20)/ac (VHT20)/ax20: 5180~5240MHz; 5745~5825MHz
802.11n (HT40)/ac (VHT40)/ax40: 5190~5230MHz; 5755~5795MHz
802.11ac (VHT80)/ax80: 5210MHz, 5775MHz
Channel separation: 20MHz for 802.11a/ 802.11ac (VHT20)/ 802.11n (HT20)/ax20
40MHz for 802.11ac (VHT40)/ 802.11n (HT40)/ax40
80MHz for 802.11ac (VHT80)/ax80
Modulation type: IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)
IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK)
IEEE 802.11ac: OFDM (64QAM, 16QAM, QPSK, BPSK)
IEEE 802.11ax: OFDMA
(64QAM, 16QAM, QPSK, BPSK, 256QAM, 1024QAM)
Antenna Type: PCB antenna 1, Maximum Gain is 4.43dBi
PCB antenna 2, Maximum Gain is 4.43dBi
PCB antenna 3, Maximum Gain is 2.77dBi
PCB antenna 4, Maximum Gain is 2.77dBi
(Antenna information is provided by applicant.)

The module can be used for mobile or portable applications with a maximum 4.43dBi antenna. The host manufacturer installing this module into their product must ensure that the final composit product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operation. The host manufacturer has to be aware not to provide informationto 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.

2.4 Limited module procedures
Not applicable. The module is a Single module and complies with the requirement of FCC Part 15.212.

2.5 Trace antenna designs
The antenna used is the PCB antenna on the module.

2.6 RF exposure considerations

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.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be located or operating in conjunction with any other antenna or transmitter.

2.7 Antennas

Antenna Specification are as follows:

Antenna Type: PCB antenna

Antenna Gain (Peak): 5GWIFI: 4.43dBi (Provided by applicant)

This device is intended only for host manufacturers under the following conditions:

The transmitter module may not be co-located with any other transmitter or antenna;

As long as the conditions above are met, further transmitter test will not be required. However, the host manufacturer is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheralrequirements, etc.).

2.8 Label and compliance information

Host product manufacturers need to provide a physical or e-label stating "Contains FCC ID: 2ATPH-JS-WI-6" With their finished product.

2.9 Information on test modes and additional testing requirements

Radio Technology: 5G WIFI

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802.11n (HT40)/ac (VHT40)/ax40: 5190~5230MHz; 5755~5795MHz

802.11ac (VHT80)/ax80: 5210MHz, 5775MHz

Channel separation: 20MHz for 802.11a/ 802.11ac (VHT20)/ 802.11n (HT20)/ax20

40MHz for 802.11ac (VHT40)/ 802.11n (HT40)/ax40

80MHz for 802.11ac (VHT80)/ax80

Modulation type: IEEE 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)

IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK)

IEEE 802.11ac: OFDM (64QAM, 16QAM, QPSK, BPSK)

IEEE 802.11ax: OFDMA

(64QAM, 16QAM, QPSK, BPSK, 256QAM, 1024QAM)

Antenna Type: PCB antenna 1, Maximum Gain is 4.43dBi

PCB antenna 2, Maximum Gain is 4.43dBi

PCB antenna 3, Maximum Gain is 2.77dBi

PCB antenna 4, Maximum Gain is 2.77dBi

(Antenna information is provided by applicant.)

2.10 Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for FCC Part 15 Subpart E 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. If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuity), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.