

WiFi 6 (802.11ax) 2x2 MU-MIMO Dual Band Module



Model: WLW518H25-V

KEY FEATURES

- 2.4GHz, 2x2 MU-MIMO, up to 573 Mbps physical data rate
- 5GHz, 2x2 MU-MIMO, up to 2402 Mbps physical data rate
- Dual-Band Concurrent 2.4/5GHz WiFi 6 (802.11ax)
- MiniPCIe Interface with PCIe 3.0
- Based on MP03.1 reference design
- Supports up to 1024-QAM
- Supports Dynamic Frequency Selection (DFS)

Specifications

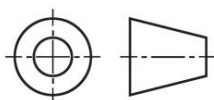
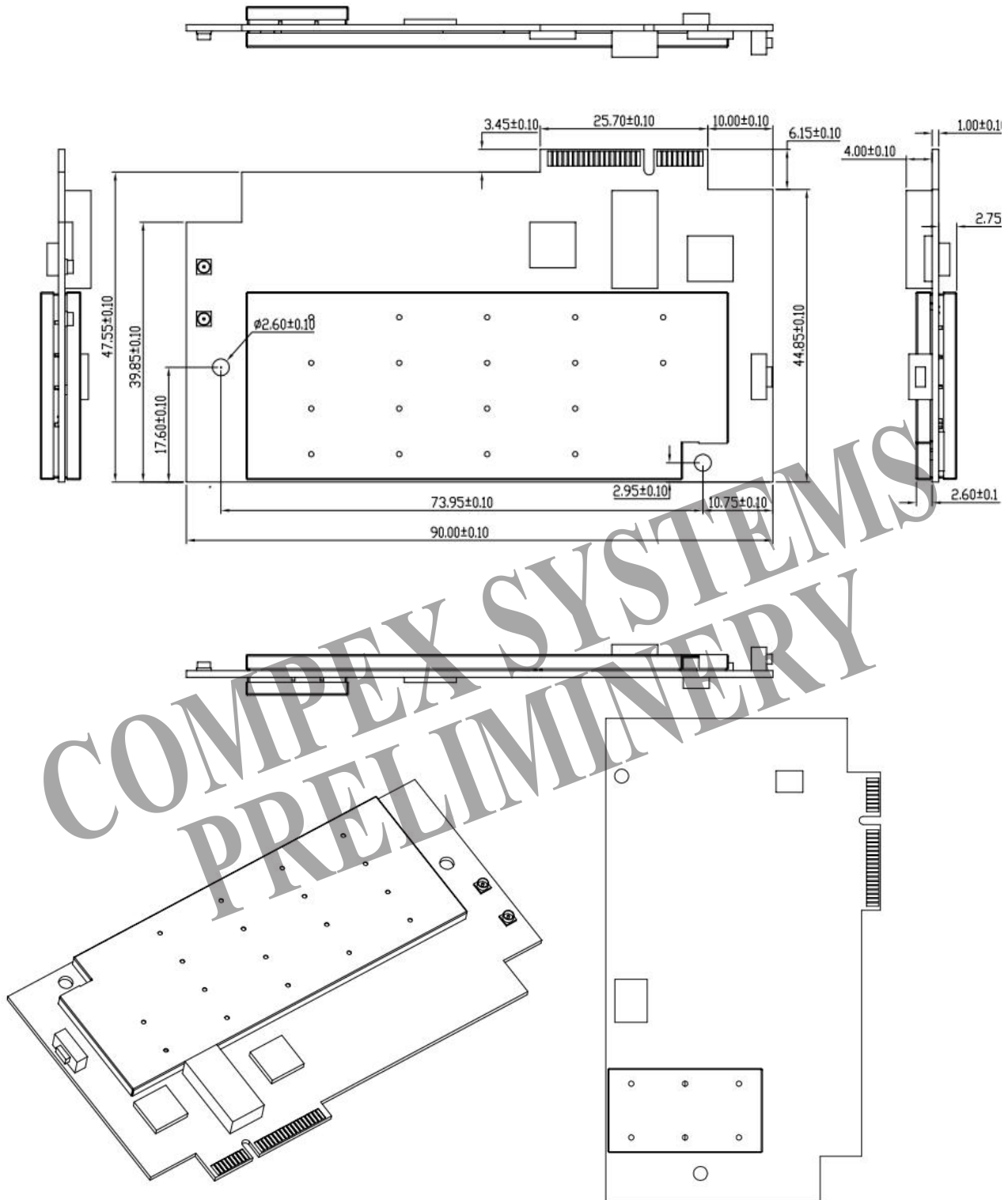
Chipset

System Memory	DDR3L 512MB 16-bit interface(RAM)
Flash	128MB
Reference Design	MP03.1
Host Interface	MiniPCIe Interface with PCIe 3.0
Operating Voltage	3.3V
Power Consumption	15W(Max)
Wireless	2.4GHz 802.11b/g/n/ax 5GHz 802.11a/ac/n/ax 2x U.FL Connectors
Frequency Range	2.4 GHz: 2.412~2.462GHz 5 GHz: 5.150~5.850GHz
Modulation Techniques	OFDMA: BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM,1024QAM
Channel Spectrum Widths for WLAN	Supports 20/40MHz at 2.4GHz Supports 20/40/80/160MHz at 5GHz
Operating Systems	OpenWRT
Certification	TBD
Environmental Temperature	Operating: -20°C to 70°C, Storage: -40°C to 90°C
Environmental Humidity, Non-Condensing	Operating: 5% to 95%, Storage: Max. 90%
Dimensions (W x H x D) in mm	51 x 90 x 7.8
Packing Box Dimension (L x W x H)	385 x 207 x 76
Carton Box Dimension (L x W x H)	422 x 410 x 240

*Configurations are subject to change without notifications.

**Can be requested from respective sales executive.

Mechanical Dimension



All dimensions are in mm.

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Component Map

U.FL Connectors

CH0 CH1



Mini PCI Express 3.0 Standard

COMPEX SYSTEMS
PRELIMINARY

Ordering Configuration

Item Code	Model	Description
WLW518H25-V 8A0000-TE	WLW518H25-V	IPQ5018 2x2 802.11a/b/g/n/ac/ax support 2.4/5GHz Dual-Band Concurrent MiniPCIe interface with PCIe 3.0 Module

COMPEX SYSTEMS
PRELIMINARY

FCC Statement

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 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.

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.

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 minimum distance 20cm between the radiator& your body.

OEM instructions

(Reference KDB 996369 D03 OEM Manual v01, 996369 D04 Module Integration Guide v02)

1. Applicable FCC rules

This device complies with part 15.247/part 15.407 of the FCC Rules.

a. The specific operational use conditions

This module can be used in IoT devices. The input voltage to the module is nominally $3.0 \sim 3.6 V_{DC}$. The operational ambient temperature of the module is $-20 \sim 70^{\circ}\text{C}$

2. Limited module procedures

This is not a Limit module, It is not applicable.

3. Trace antenna design

N/A

4. RF exposure considerations

The 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.

5. Antenna

Antenna type: Omni antenna1, 2.4G Wi-Fi Peak antenna gain 4.5 dBi
5G Wi-Fi Peak antenna gain 7dBi

Omni antenna2, 2.4G Wi-Fi Peak antenna gain 4.0 dBi
5G Wi-Fi Peak antenna gain 5.8 dBi

6. Label and compliance information

An exterior label on OEM's end product can use wording such as the following: "Contains FCC ID: TK4WLW518H25 "

7. Information on test modes and additional testing requirements

- 1) The modular transmitter has been fully tested by the module grantee on the required number of channels, modulation types, and modes, it should not be necessary for the host installer to re-test all the available transmitter modes or settings. It is recommended that the host product manufacturer, installing the modular transmitter, perform some investigative measurements to confirm that the resulting composite system does not exceed the spurious emissions limits or band edge limits (e.g., where a different antenna may be causing additional emissions).
- 2) The testing should check for emissions that may occur due to the intermixing of emissions with the other transmitters, digital circuitry, or due to physical properties of the host product (enclosure). This investigation is especially important when integrating multiple modular transmitters where the certification is based on testing each of them in a stand-alone configuration. It is important to note that host product manufacturers should not assume that because the modular transmitter is certified that they do not have any responsibility for final product compliance.

- 3) If the investigation indicates a compliance concern the host product manufacturer is obligated to mitigate the issue. Host products using a modular transmitter are subject to all the applicable individual technical rules as well as to the general conditions of operation in Sections 15.5, 15.15, and 15.29 to not cause interference. The operator of the host product will be obligated to stop operating the device until the interference have been corrected .

- 4) Additional testing, Part 15 Sub part B disclaimer:

The device is only FCC authorized for the specific rule parts (i.e., FCC transmitter rules) listed on the grant, and 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. The final host / module combination need to be evaluated against the FCC Part 15B criteria for unintentional radiators in order to be properly authorized for operation as a Part 15 digital device.

The host integrator installing this module into their product must ensure that the final composite product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operation and should refer to guidance in KDB 996369. For host products with certified modular transmitter, the frequency range of investigation of the composite system is specified by rule in Sections 15.33(a)(1) through (a)(3), or the range applicable to the digital device, as shown in Section 15.33(b)(1), whichever is the higher frequency range of investigation When testing the host product, all the transmitters must be operating. The transmitters can be enabled by using publicly-available drivers and turned on, so the transmitters are active. When testing for emissions from the unintentional radiator, the transmitter shall be placed in the receive mode or idle mode, if possible. If receive mode only is not possible then, the radio shall be passive (preferred) and/or active scanning. In these cases, this would need to enable activity on the communication BUS (i.e., PCIe, SDIO, USB) to ensure the unintentional radiator circuitry is enabled. Testing laboratories may need to add attenuation or filters depending on the signal strength of any active beacons (if applicable) from the enabled radio(s). See ANSI C63.4, ANSI C63.10 for further general testing details. The product under test is set into a link/association with a partnering device, as per the normal intended use of the product. To ease testing, the product under test is set to transmit at a high duty cycle, such as by sending a file or streaming some media content.