

# **Carestream**

**Olympus WiFi Module**

**OLYM**

**User Manual**

V1.1

Olympus WiFi Module is a WLAN 11ac wave-2 USB 3.0 module which compliant with 802.11b/g/n/a/ac specifications, 2.4GHz up to 300Mbps / 5GHz up to 867Mbps data rate, provides multi functional capabilities, particularly the high performance throughput and high quality security.

**FEATURES**

- 2T2R 802.11n 2.4GHz WiFi speed up to max 300Mbps data rate.
- 2T2R 802.11ac 5GHz WiFi speed up to max 867Mbps data rate
- Complies with USB Specification 3.0
- Compatible with IEEE 802.11b/g/n/a/ac Specifications.
- Supports WPA, WPA2.
- Supports MU-MIMO (Multi-User MIMO)



**SPECIFICATIONS**

Model Name	OLYM
Product Name	Olympus WiFi Module
Standard	IEEE 802.11ac / a / b / g / n / d / e / h / i
Data Transfer Rate	11ac mode up to 867Mbps 11n mode up to 300Mbps
Modulation Method	CCK,DQPSK,DBPSK,BPSK,QPSK,16QAM,64QAM,256QAM
Frequency Band	2.4GHz and 5GHz ISM Band
Receiver Sensitivity	-80dBm – 802.11b@11Mbps -71dBm – 802.11g@54Mbps -67dBm – 802.11n@MCS7_BW20 -64dBm – 802.11n@MCS7_BW40 -57dBm – 802.11ac@NSS1_MCS9_BW20 -54dBm – 802.11ac@NSS1_MCS9_BW40 -51dBm – 802.11ac@NSS1_MCS9_BW80
Operation Range	Indoor up to TBD meters, Outdoor up to TBD meters
Antenna	IPEX Antenna x 2
LED	POWER
Security	WPA, WPA2
Ethernet interface	None
Power supply	USB / DC 3.3V
Operating Temperature	0 ~ 50°C ambient temperature
Storage Temperature	-10 ~ 70°C ambient temperature
Humidity	5 to 90 % maximum (non-condensing)
PCB Dimension	26 (L) * 16.5 (W) mm

## **Federal Communication Commission Interference 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 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 Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this 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.

### **IMPORTANT NOTE:**

#### **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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

### Applicable FCC rules to module

FCC Part 15.247 / 15.407

### Summarize the specific operational use conditions

The module is must be installed in mobile device.

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.

As long as 3 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 module installed.

**IMPORTANT NOTE:** In the event that these conditions can not 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 not 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. 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.

### Limited module procedures

Not applicable

### Trace antenna designs

Not applicable

### RF exposure considerations

20 cm separation distance and co-located issue shall be met as mentioned in "Summarize the specific operational use conditions".

Product manufacturer shall provide below text in end-product manual

"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."

### Antennas

Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)		
			2400~2483.5	5150~5250	5725~5850
ANTX600P00 1B24553	PCB	ipex	4.6	4.9	5.1
ANTX350P00 1B24553	PCB	ipex	4.6	4.9	5.1

### Label and Compliance Information

Product manufacturers need to provide a physical or e-label stating

"Contains FCC ID: U72OLYM" with finished product

### Information on Test Modes and Additional Testing Requirements

Test tool: MP\_Kit\_RTL11ac\_8822BU\_USB, v0.54 shall be used to set the module to transmit continuously.

### Additional Testing, Part 15 Subpart B Disclaimer

The module is only FCC authorized for the specific rule parts 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 product still requires Part 15 Subpart B compliance

testing with the modular transmitter installed

**Industry Canada statement:**

*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*

*Cet appareil contient des émetteurs / récepteurs exempts de licence qui sont conformes au (x) RSS (s) exemptés de licence d'Innovation, Sciences et Développement économique Canada. L'opération est soumise aux deux conditions suivantes:*

- (1) Cet appareil ne doit pas causer d'interférences*
- (2) Cet appareil doit accepter toute interférence, y compris les interférences pouvant provoquer un fonctionnement indésirable de l'appareil*

*This radio transmitter (IC: 7027A-OLYM) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.*

*Le présent émetteur radio (IC: 7027A-OLYM) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.*

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)		
				2400~2483.5	5150~5250	5725~5850
1	ANTX600P00 1B24553	PCB	ipex	4.6	4.9	5.1
2	ANTX350P00 1B24553	PCB	ipex	4.6	4.9	5.1

**Caution:**

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;

**Avertissement:**

les dispositifs fonctionnant dans la bande de 5150 à 5250MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

**Radiation Exposure Statement:**

The product comply with the Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

**Déclaration d'exposition aux radiations:**

Le produit est conforme aux limites d'exposition pour les appareils portables RF pour les Etats-Unis et le Canada établies pour un environnement non contrôlé. Le produit est sûr pour un fonctionnement tel que décrit dans ce manuel. La réduction aux expositions RF peut être augmentée si l'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible.

**This device is intended only for OEM integrators under the following conditions:**

1) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 1 condition 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 module installed.

**Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes:**

1) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

Tant que les 1 condition ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

**IMPORTANT NOTE:**

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not 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 Canada authorization.

**NOTE IMPORTANTE:**

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

**End Product Labeling**

The final end product must be labeled in a visible area with the following: "Contains IC:7027A-OLYM".

**Plaque signalétique du produit final**

Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 7027A-OLYM".

**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.

**Manuel d'information à l'utilisateur final**

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.



Under Industry Canada regulations, this external radio frequency power amplifier (insert Industry Canada certification number of radio frequency power amplifier) may only be used with the transmitter with which the amplifier has been certified by Industry Canada. The certification number for the transmitter with which this amplifier is permitted to operate is IC: XX...X-YY...Y.

*Conformément à la réglementation d'Industrie Canada, le présent amplificateur de puissance de radiofréquence externe (insérer le numéro de certification d'Industrie Canada de l'amplificateur de puissance de radiofréquence externe) peut être utilisé seulement avec l'émetteur avec lequel il a été certifié par Industrie Canada. Le numéro de certification de l'émetteur avec lequel cet amplificateur est autorisé à fonctionner est IC : XX...X YY...Y.*

## Europe – EU Declaration of Conformity

This device complies with the essential requirements of the Radio Equipment directive: 2014 / 53 / EU. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the Radio Equipment directive: **2014 / 53 / EU**:

EN 300 328 V2.1.1

EN 301 893 v2.1.1

EN 301 489-1 V2.1.1

EN 301 489-17 V3.1.1

EN 62311 :2008;EN 50385 2017;EN50665:2017

18.00 dBm, 2.4G: 2.412 GHZ~2.472GHZ

22.90 dBm, 5.15-5.25GHz

SW version: 1030.21.302.2017

The minimum distance between the user and/or any bystander and the radiating structure of the transmitter is 20cm.

5150 ~ 5350 MHz is limited to indoor used in below countries.

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

