



Kymeta™ u8 Products Safety and Handling Guide

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1 Introduction

This document describes general safety precautions that must be observed during all phases of operation, service, and repair of Kymeta™ u8 products. Failure to comply with these precautions or with specific warnings elsewhere in this document violates safety standards of design, manufacture, and intended use of the equipment. Kymeta assumes no liability for the customer's failure to comply with these requirements.

2 Handling

Take special care when handling and installing the Kymeta products and Kymeta parts and accessories.

- » Use proper lifting technique and safety precautions for handling heavy or bulky objects; lift the UT with a minimum of two people.
- » Never apply paint or put stickers on the UT.
- » Never put any metal over the front or near the UT, to avoid interference with the RF function.
- » Provide the specified voltage for all components. Stresses exceeding the absolute maximum rating of this device may damage the device, degrade performance, and affect device reliability.
- » Installation should include upstream over-current protection to limit supply current to less than 70 A.
- » Never lift the UT by any mounted RF components or cables if the shroud is removed.

3 Electrostatic discharge (ESD) precautions

Do not open the antenna communications module or transceiver component housings. Doing any of these will void the warranty. Note that you may open or remove the shroud of the UT without violation of warranty.

Opening or removing the sealed antenna enclosure may cause exposure to high voltages, electric shock, and other hazards. In addition, electronic components contained within the enclosure are sensitive to ESD and could be damaged if ESD precautions are not observed.

4 Information for operators and maintenance technicians

Operators and maintenance technicians requiring access to the antenna and its immediate surroundings should be properly trained on the potential for exposure and the time-averaging considerations specified in [FCC OET Bulletin 65](#) or other relevant national regulations. To conduct maintenance requiring access to this region, technicians must either ensure the antenna is in non-transmit (receive-only) mode or switch off the terminal power. In any case where a u8 product is not in a secured area inaccessible to the public, install an indicative barrier a safe distance around the antenna.

5 RF energy exposure

5.1 8 W and 20 W UT recommendations

Power density measurements in the u8 UT (20 W (GEO) / 4.5 W (LEO) transmit power) configuration show full compliance with the occupational/controlled MPE of 5 mW/cm². To avoid RF exposure when operating a UT in a 20 W (GEO) / 4.5 W (LEO) configurations, do not place your head or other body parts near the top and sides of the antenna when the system is operational. Maintain a distance of 60 cm (23.62 in.) or more from the face and within 200 cm (78.74 in.) from the center of the antenna. The figure below identifies the keep out region (gray cone) and safe region (the area outside the cone) for a 20 W (GEO) / 4.5 W (LEO) configurations.

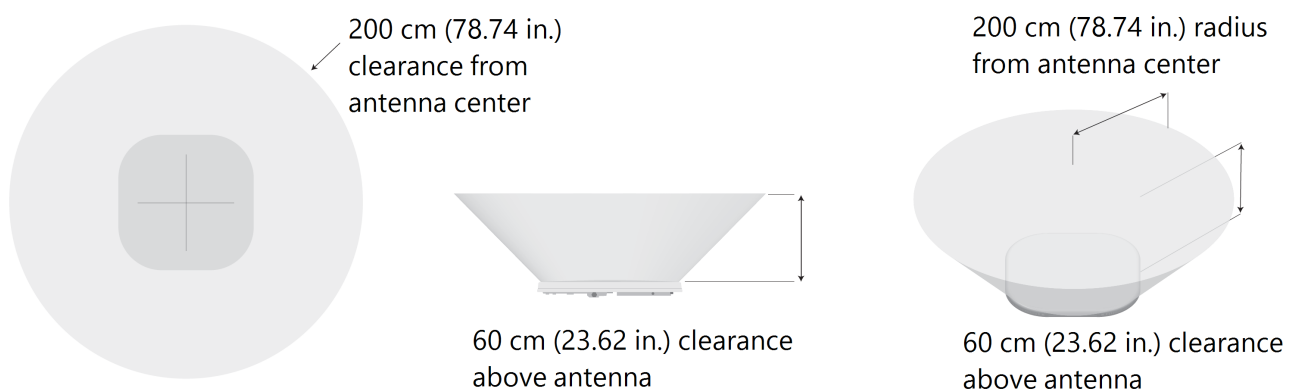


Figure 1: Keep out region (gray cone) and safe region (outside the gray cone) for a 20 W (GEO) / 4.5 W (LEO) UT

In unusual cases where the UT is not in a secured area inaccessible to the public, customers should install an indicative barrier around the UT. The unlikely scenario of a member of the general public accessing the keep out region (see figure above) near the UT is deemed analogous to a condition of transient exposure that would exist for only a very short duration.

Kymeta has received authorization to operate the UT in the 20 W (GEO) / 4.5 W (LEO) configuration (described herein) only. Any increase to input power may increase RF exposure and/or increase the size of the “keep out region” as described by the gray cone above. No modifications or changes to the input power should be made without the express consent of Kymeta and any such changes (if approved) should only be completed by trained professionals who have reviewed and understand the consequences of such changes, including but not limited to an understanding of FCC OET Bulletin 65. Any such changes may require additional testing or recertification/authorization from applicable regulatory agencies. Such testing/authorizations are the responsibility of the user and Kymeta assumes no liability where such changes are made to the UT.

Kymeta™ u8 terminals comply with FCC guidelines for protecting individuals from harmful levels of RF exposure.

5.2 40 W UT recommendations

The recommendations provided in this document comply with IEEE C95.7-2014 for occupational safety around the antenna. Adherence to these recommendations for safe distance ensures compliance with the occupational/controlled MPE of 5 mW/cm^2 . To avoid exposure when operating the u8 terminal in a 40 W configuration, do not place your head or other body parts near the top and sides of the satellite antenna when the system is operational.

Maintain a distance of 300 cm (118 in.) or more from the face of the antenna, and more than 300 cm (118 in.) from the edge of the antenna for general population use ($< 1 \text{ mW/cm}^2$).

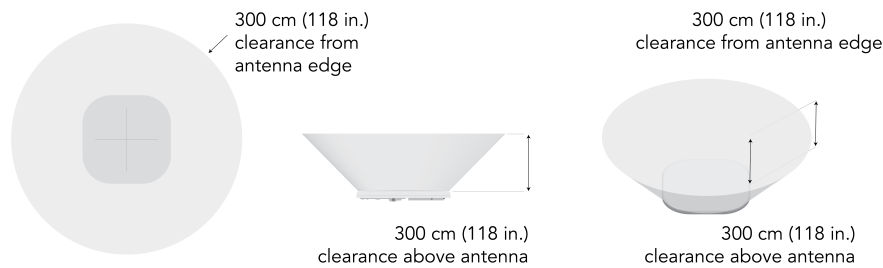


Figure 2: Keep out region (gray cone) and safe region (outside the gray cone) for the 40 W UT, designated for general population use

Maintain a distance of 30 cm (12 in.) or more from the face of the antenna, and more than 200 cm (79 in.) from the edge of the antenna for occupational use ($< 5 \text{ mW/cm}^2$).



Figure 3: Keep out region (gray cone) and safe region (outside the gray cone) for the 40 W UT, designated for occupational use

The figures above identify the keep-out region (gray cone) and safe region (the area outside the cone) for a 40 W UT.

If operating the UT with increased power, only operators who have reviewed and understand the consequences of such operation, including but not limited to an understanding of FCC OET Bulletin 65, should operate or conduct maintenance on the equipment. All warnings or instructions included in this guide must be complied with. Such operation may require additional testing or recertification/authorization from applicable regulatory agencies. Such testing/authorizations are the responsibility of the user, and Kymeta assumes no liability where such changes are made to the u8 product.

6 Distance to other equipment

Radars and other high-power transmitters affect the performance of the u8 antenna installed within the beam path. To mitigate the risk of interference and damage, install the UT as far from the radar/transmitter as possible and outside of the beam width, typically $\pm 15^\circ$ elevation range, as shown in the image below:

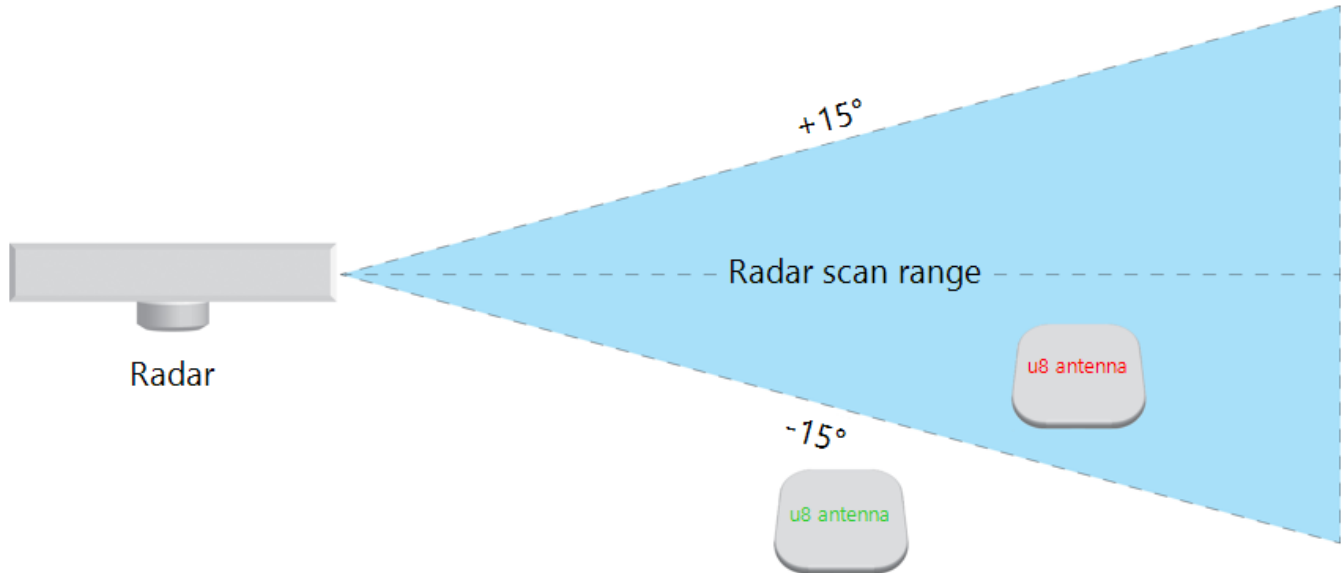


Figure 4: Install the UT outside the beam width of radar and other high-power transmitters

Evaluate the performance of the UT with all radar and transmitters operating normally before finalizing the installation.

7 Declaration of conformity

7.1 Hawk u8 GEO UT

Kymeta Corp., of 12277 134th Ct NE, Suite 100, Redmond, WA 98052, USA, declares under our sole responsibility that the product Kymeta u8 antenna to which this declaration relates, is in conformity with the following standards and/or other normative documents:

RE Directive

ETSI EN 301 428, ETSI EN 302 340, ETSI EN 302 977, ETSI 303 413, Council Recommendation 1999/519/EC.

EMC Directive

ETSI EN 301 489-1, ETSI EN 301 489-12, ETSI EN 301 489-19, EN 60945:2002,

Low Voltage Directive

IEC 62368,

We hereby declare that all essential radio test suites have been carried out and that the above-named product is in conformity with all essential requirements of RE Directive 2014/53/EU. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. To ensure regulatory and safety compliance, use power and interface cables according to the guidelines in this manual. The technical documentation relevant to the above equipment will be held at:

Kymeta Corp, 12277 134th Ct NE, Suite 100, Redmond, WA 98052, USA

7.2 Hawk u8 LEO UT

Kymeta Corp., of 12277 134th Ct NE, Suite 100, Redmond, WA 98052, USA, declares under our sole responsibility that the product Kymeta u8 antenna to which this declaration relates, is in conformity with the following standards and/or other normative documents:

RE Directive

ETSI EN 303 980, ETSI 303 413, Council Recommendation 1999/519/EC.

EMC Directive

ETSI EN 301 489-1, ETSI EN 301 489-12, ETSI EN 301 489-19, EN 60945:2002,

Low Voltage Directive

IEC 62368,

We hereby declare that all essential radio test suites have been carried out and that the above-named product is in conformity with all essential requirements of RE Directive 2014/53/EU. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. To ensure regulatory and safety compliance, use power and interface cables according to the guidelines in this manual. The technical documentation relevant to the above equipment will be held at:

Kymeta Corp, 12277 134th Ct NE, Suite 100, Redmond, WA 98052, USA

7.3 Hawk u8 GEO-LTE UT

Kymeta Corp., of 12277 134th Ct NE, Suite 100, Redmond, WA 98052, USA, declares under our sole responsibility that the product Kymeta u8 antenna to which this declaration relates, is in conformity with the following standards and/or other normative documents:

RE Directive

ETSI EN 300 328, ETSI EN 301 893, ETSI EN 300 440, EN 301 908-6 ETSI EN 303 413, EN 301 428, ETSI EN 301 430, ETSI EN 302 977, ETSI EN 302 340, Council Recommendation 1999/519/EC.

EMC Directive

EN 301 489-1, EN 301 489-12, EN 301 489-17, EN 301 489-19, EN 301 489-52 v1.2.1, EN 55032:2015, EN 55035:2017, EN 50498:2010, EN 60945:2002 (Sections 9 and 10)

Low Voltage Directive

IEC 62368,

We hereby declare that all essential radio test suites have been carried out and that the above-named product is in conformity to all the essential requirements of RE Directive 2014/53/EU. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. To ensure regulatory and safety compliance, use power and interface cables according to the guidelines in this manual. The technical documentation relevant to the above equipment will be held at:

Kymeta Corp, 12277 134th Ct NE, Suite 100, Redmond, WA 98052, USA

7.4 Hawk u8 LEO-LTE UT

Kymeta Corp., of 12277 134th Ct NE, Suite 100, Redmond, WA 98052, USA, declares under our sole responsibility that the product Kymeta u8 antenna to which this declaration relates, is in conformity with the following standards and/or other normative documents: ETSI EN 301 428, ETSI EN 302 340, ETSI EN 302 977, EN 303 413, EN 300 328, EN 301 908-1, ETSI EN 301 489-1, ETSI EN 301 489-12, EN 301 489-17, ETSI EN 301 489-20, EN 301 489-52, EN 60945:2002, ECE R10, IEC 62368-1 Third Edition, Council Recommendation 1999/519/EC. We hereby declare that all essential radio test suites have been carried out and that the above-named product is in conformity to all the essential requirements of RE Directive 2014/53/EU. These limits are designed to provide a reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. To ensure regulatory and safety compliance, use power and interface cables according to the guidelines in this manual. The technical documentation relevant to the above equipment will be held at:

Kymeta Corp, 12277 134th Ct NE, Suite 100, Redmond, WA 98052, USA

8 FCC regulatory information

Compliance Statement (Part 15.19)

The enclosed hardware device (when operating with a 20 W4.5 W configuration) 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.

Warning (Part 15.21)

Changes or modifications not expressly approved by Kymeta could void the user's authority to operate the equipment. Manufacturer is not responsible for any radio or TV interference caused by modifications to this equipment.

Compliance Statement (Part 15.105(b))

This equipment (when operating with a 20 W4.5 W configuration) has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in an industrial 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.

9 Radio standards specifications (RSS) information

The following information pertains to Radio standards specifications (RSS) for Canada.

(ENG) This device incorporates license-exempt transmitter(s)/receiver(s) that adhere to the license-exempt Radio Standards Specifications (RSS) established by Innovation, Science and Economic Development Canada. Its operation is subject to the following conditions:

- » This device may not cause interference.
- » This device must accept any interference, including interference that may cause undesired operation of the device.

(FRA) Cet appareil intègre des émetteur(s)/récepteur(s) exempt(s) de licence qui respectent les spécifications des normes radio exemptes de licence (RSS) établies par Innovation, Sciences et Développement économique Canada. Son fonctionnement est soumis aux conditions suivantes:

- » Cet appareil ne doit pas causer d'interférences.
- » Cet appareil doit accepter toute interférence, y compris celle pouvant entraîner un fonctionnement indésirable de l'appareil.

10 WEEE information

Electrical and electronic equipment (EEE) contains materials, components and substances that may be hazardous and present a risk to human health and the environment when waste electrical and electronic equipment (WEEE) is not handled correctly.

Electrical and electronic equipment is marked with the crossed-out wheelie bin symbol indicating that electrical and electronic equipment should not be disposed of in the regular household waste stream but needs to be collected separately.

Users of EEE must not discard WEEE together with household waste. Users must follow local recycling regulations to reduce adverse environmental impact in connection with disposal of WEEE and to increase opportunities for reuse, recycling, and recovery of WEEE.

Please contact weee@kymetacorp.com for recycling and take-back assistance.

For more details, refer to the Kymeta website: <https://www.kymetacorp.com/legal/maintenance-and-support/weee-information-page/>.

11 Customer support

Contact Kymeta customer support at support@kymetacorp.com or call Kymeta **1-855-525-6638** for urgent issues.

12 Revision history

Revision	Change
A	Initial document.
B	Added an upstream over-current protection statement to Section "Handling".
C	Updated Section "Declaration of conformity".
D	Updated Section "RF energy exposure."
E	Added Section "WEEE information".
F	Added Section "Radio standards specifications (RSS) information".

13 Copyright and trademark information

©2023 Kymeta Corporation. All Rights Reserved. KYMETA, HAWK, GOSHAWK, OSPREY, PEREGRINE, MAKING MOBILE GLOBAL, and CONNECTED BY KYMETA are trademarks of Kymeta Corporation, with registrations or pending applications in the U.S. and/or other countries. All other trademarks are the property of their respective owners.