

|                            |                |                  |
|----------------------------|----------------|------------------|
| <b>4-Port Omni Antenna</b> | <b>R1</b>      | <b>Y1</b>        |
| <b>Frequency Range</b>     | <b>698-960</b> | <b>1695-2690</b> |
| <b>Dual Polarization</b>   | <b>X</b>       | <b>X</b>         |
| <b>HPBW</b>                | <b>360°</b>    | <b>360°</b>      |
| <b>Fixed Electr. DT</b>    | <b>2°</b>      | <b>2°</b>        |

**4-Port Omni 698-960/1695-2690 360°/360° 6/9dBi 2°/2°T with GPS**

|                            |                            |                                    |           |                 |  |
|----------------------------|----------------------------|------------------------------------|-----------|-----------------|--|
| <b>Type No.</b>            |                            | <b>80010745</b>                    |           | <b>80010746</b> |  |
| Radome Colour              |                            | Brown                              |           | Grey            |  |
| <b>Lowband</b>             |                            | <b>R1</b>                          |           |                 |  |
|                            |                            | <b>698-960</b>                     |           |                 |  |
| Frequency range            | MHz                        | 698 – 824                          | 824 – 894 | 880 – 960       |  |
| Polarization               | °                          | +45, -45                           | +45, -45  | +45, -45        |  |
| Gain                       | dBi                        | 5.0                                | 6.0       | 6.5             |  |
| <b>Horizontal Pattern:</b> |                            |                                    |           |                 |  |
| Half-power beam width      | °                          | 360 (with 1-8 dB nulls, typical)   |           |                 |  |
| <b>Vertical Pattern:</b>   |                            |                                    |           |                 |  |
| Half-power beam width      | °                          | 42                                 | 37.5      | 34              |  |
| Electrical tilt            | °                          | 2, fixed                           |           |                 |  |
| Impedance                  | Ω                          | 50                                 |           |                 |  |
| VSWR                       |                            | < 1.5                              |           |                 |  |
| Isolation                  | Intrasystem<br>Intersystem | dB                                 |           |                 |  |
|                            |                            | > 26, typ. 30<br>> 28 (R1 // Y1)   |           |                 |  |
| Intermodulation IM3        | dBc                        | < -150 (2 x 43 dBm carrier)        |           |                 |  |
| Max. power per input       | W                          | 250 (at 50 °C ambient temperature) |           |                 |  |



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| Highband                   |                            | Y1                                 |             |             |             |             |
|----------------------------|----------------------------|------------------------------------|-------------|-------------|-------------|-------------|
|                            |                            | 1695-2690                          |             |             |             |             |
| Frequency range            | MHz                        | 1695 – 1880                        | 1850 – 1990 | 1920 – 2180 | 2200 – 2490 | 2490 – 2690 |
| Polarization               | °                          | +45, -45                           | +45, -45    | +45, -45    | +45, -45    | +45, -45    |
| Gain                       | dBi                        | 9.0                                | 9.0         | 9.0         | 9.0         | 9.5         |
| <b>Horizontal Pattern:</b> |                            |                                    |             |             |             |             |
| Half-power beam width      | °                          | 360 (with 6–16 dB nulls, typical)  |             |             |             |             |
| <b>Vertical Pattern:</b>   |                            |                                    |             |             |             |             |
| Half-power beam width      | °                          | 18.4                               | 17.5        | 16.5        | 14.5        | 13.5        |
| Electrical tilt            | °                          | 2, fixed                           |             |             |             |             |
| Impedance                  | Ω                          | 50 Ω                               |             |             |             |             |
| VSWR                       |                            | < 1.5                              |             |             |             |             |
| Isolation                  | Intrasystem<br>Intersystem | dB                                 |             |             |             |             |
|                            |                            | > 25, typ. 28<br>> 40 (Y1 // R1)   |             |             |             |             |
| Intermodulation IM3        | dBc                        | < -150 (2 x 43 dBm carrier)        |             |             |             |             |
| Max. power per input       | W                          | 200 (at 50 °C ambient temperature) |             |             |             |             |

| GPS specifications            |     |  |
|-------------------------------|-----|--|
| Frequency range               | MHz | 1575.42 ± 3                                    |
| LNA gain                      | dB  | 27 typical                                     |
| Pre-amp filtering             | dB  | -30 at ± 100 MHz                               |
| Polarization                  |     | Right-hand circular                            |
| H-plane beam width            |     | Omni   |
| E-plane half-power beam width | °   | 105  |
| Connector                     |     | N female                                       |
| DC power                      | Vdc | +3-5.5, 18-25 mA<br>Through N output connector |
| Temperature range             | ° C | -35 to +70                                     |

| Mechanical specifications                    |              |   |
|--|--------------|---|
| Input  |              | 4 x 7-16 connector female   |
| Connector position                           |              | Bottom  |
| Weight                                       | kg<br>lb     | 18.1<br>39.9  |
| Wind load<br>(at Rated Wind Speed: 150 km/h) | N<br>lbf     | 138<br>32   |
| Max. wind velocity                           | km/h<br>mph  | 242<br>150  |
| Mechanical interface                         |              | Hex nut<br>(requires a 1½" wrench)<br>Torque setting:<br>122 Nm   90 lbf-ft |
| Packing size                                 | mm<br>inches | 755 x 480 x 480<br>29.7 / 18.9 / 18.9                                       |
| Height / diameter                            | mm<br>inches | 626 / 407<br>24.6 / 16  |

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# Accessories

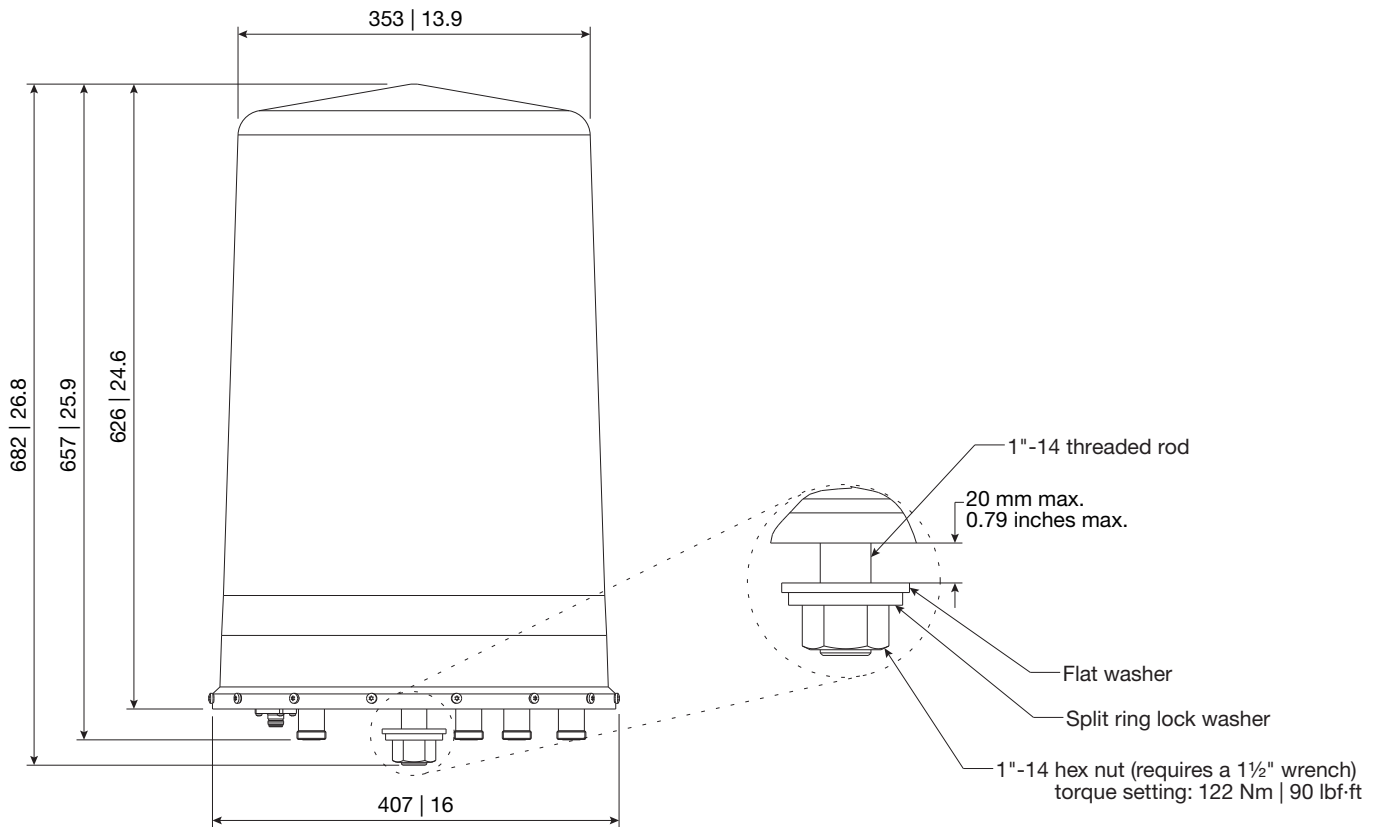
## General Information

**Antenna area:**

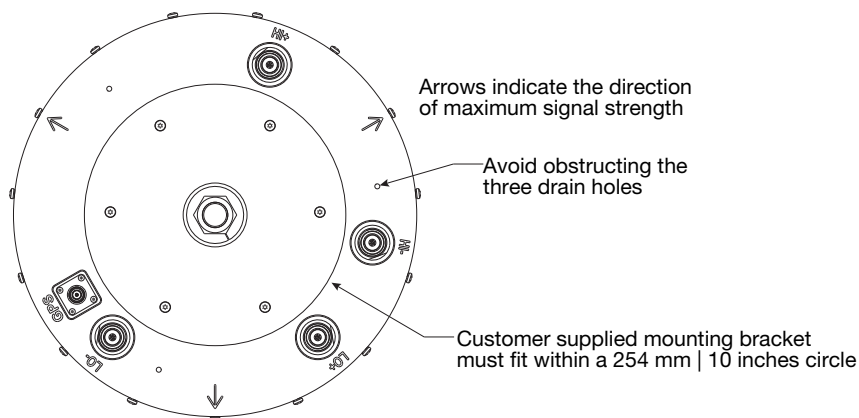
**Reflector screen:** Aluminum. **Radiator:** Tin plated zinc.  
**Cylindrical fiberglass radome:** The max. radome diameter is 407 mm | 16 inches. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting.  
 Radome colour **80010745: Brown.**  
**80010746: Grey.**

**Mounting:**

Designed to be mounted on top of a utility pole using a custom mounting bracket supplied by the customer.



All dimensions in mm | inches



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All specifications are subject to change without notice.  
 The latest specifications are available at [www.kathreinusa.com](http://www.kathreinusa.com)

## Environmental conditions:

Kathrein cellular antennas are designed to operate under the environmental conditions as described in ETS 300 019-1-4 class 4.1 E.

The antennas exceed this standard with regard to the following items:

- Low temperature: –55 °C
- High temperature (dry): +60 °C

For antennas equipped with FlexRET: The electrical downtilt adjusting is designed to operate under the environmental conditions as described in the valid data sheet of the FlexRET.

Ice protection: Due to the very sturdy antenna construction and the protection of the radiating system by the radome, the antenna remains operational even under icy conditions.

## Environmental tests:

Kathrein antennas fulfil the stated specifications after completion of the environmental tests as defined in ETS 300 019-2-4. The homogenous design of Kathrein's antenna families uses identical modules and materials.

Extensive tests have been performed on typical samples and modules. The vibration test has been adapted relating to frequency and acceleration to the conditions of mast mounted antennas.

## Please note:

**As a result of more stringent legal regulations and judgements regarding product liability, we are obliged to point out certain risks that may arise when products are used under extraordinary operating conditions.**

The mechanical design is based on the environmental conditions as stipulated in ETS 300 019-1-4. Wind loads are calculated according to DIN 1055-4.

The antennas may be used at locations where the anticipated peak wind velocity or gust wind speed lies within the maximum wind speed listed in the data sheet. We warrant the mechanical safety and electrical functionality under such conditions. The wind speeds are defined in accordance with the DIN, EN or TIA standards. This warranty makes allowance for the partial safety factors specified in those standards. Extraordinary operating conditions, such as heavy icing or exceptional dynamic stress (e.g. strain caused by oscillating support structures), may result in the breakage of an antenna or even cause it to fall to the ground. These facts must be considered during the site planning process.

**The details given in our data sheets have to be followed carefully when installing the antennas and accessories.**

**Site planning and installation must be carried out by qualified and experienced staff. All relevant national safety regulations must be upheld and respected. Incorrect site planning, faulty installation, as well as interfering surroundings on site, may lead to deviations in the electrical parameters compared to those specified in the respective data sheets.**

**The connectors on this product are only suitable for connecting to the compatible counterpart. Please ensure that the connected cable has been fitted with a connector of the same standard, otherwise damage may occur.**

**The tilt values will be set to any arbitrary value in the given tilt range. These values are independent from the frequency band or antenna type and can vary between antennas and bands.**

## EU-RED

Hereby, Kathrein Werke KG declares that the radio equipment is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: <http://www.kathrein.com>

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Our quality assurance system and our environmental management system apply to the entire company and are certified by TÜV according to EN ISO 9001 and EN ISO 14001.



Our products are compliant to the EU Directive RoHS as well as to other environmentally relevant regulations (e.g. REACH).