UNFURLABLE SPACE REFLECTOR SOLUTIONS

To meet the growing need for large satellite antenna systems that can be stowed into small launch envelopes, Harris offers unfurlable reflector-feed solutions in sizes ranging from 1 to 25 meters. These solutions provide unmatched performance for satellite communications and broadcast systems that require high antenna gain for big data streams.

REFLECTOR SOLUTIONS THAT INTEGRATE EASILY INTO ANY SPACECRAFT CONFIGURATION

BENEFITS

- Reduces risk through flight-proven reflector designs
- Enables increased frequency reuse for high-throughput satellite communications
- Reduces cost per bit with the world’s most accurate and stable mesh reflectors
- Enables large reflector configurations to communicate with small terminals
- Meets the need for customized solutions with three design configurations

Commercial Communications reflector not subject to ITAR controls

PUSHING THE BOUNDARIES OF TECHNOLOGY

Harris reflector solutions offer unparalleled performance in bands ranging from UHF to Ka. Our continuous investments in advanced materials, designs, and manufacturing methods increase performance, lower cost, and reduce our customers’ schedules.

With over 40 years of experience in developing and manufacturing unfurlable reflector solutions, Harris is recognized as the world’s leading reflector manufacturer. As a result of our ongoing research and development, our customers get not only the best accuracy and stability offered in the unfurlable market, but also the most innovation.

In 2010, Harris successfully launched the world’s largest unfurlable reflector, a state-of-the-art hoop solution that brought our customer unmatched performance in stowed packaging efficiency. More recently, our introduction of a 5-meter Ka-band unfurlable mesh reflector offers customers the benefits of small size and unprecedented accuracy in unfurlable technology at Ka band.
FACTS

Harris unfurlable reflectors have logged over 800 years combined on-orbit service.

More than 90 Harris unfurlable large-aperture mesh reflectors have been successfully deployed.

Harris introduced the first unfurlable Ka-band reflector for commercial applications.

Harris unfurlable reflector aperture sizes range from 1 meter to 25 meters.

Harris reflectors support frequency ranges from UHF to Ka-band and beyond.

UNFURCLABLE SPACE REFLECTOR SOLUTIONS

HARRIS ADVANTAGE

Harris unfurlable reflector solutions and testing capabilities offer unique advantages to satellite operators. We have the world’s largest dedicated assembly, integration, and test facilities for the production of unfurlable reflectors. These extensive in-house facilities provide unmatched production resources to our customers, assuring on-time delivery.

Our designs, which include offset edge-mounted, axisymmetric center-mounted configurations and more, are easily adapted to individual mission needs. Multiple reflector configurations, including radial rib, folded rib, and hoop truss, accommodate the most demanding mission and packaging requirements.

Our simple, flight-proven central deployment mechanism means controlled, predictable deployments without dynamic disturbances to the vehicle every time.

HARNESSING KA BAND CAPABILITY

Harris offers Ka-band unfurlable mesh reflectors in aperture diameters of 1 to 9 meters that greatly exceed the capability of solid reflectors in the 2 to 3 meter class. These lightweight unfurlable mesh reflectors enable smaller spot beams, which result in increased frequency reuse for more satellite throughput. At less than 0.3 mm RMS, our mesh surfaces are the most accurate in the world.

CUSTOMER COMMITMENT

Harris offers unmatched customer support from concept development through assembly and test to on-orbit delivery and operations. Our customers can rely on the thousands of years of collective, relevant experience that our 300 engineers and technicians use to solve mission needs.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>RF Performance</th>
<th>&lt;0.2dB lost at 30 GHz</th>
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<tbody>
<tr>
<td>Surface Accuracy and Reflectance Performance</td>
<td>Up to and beyond Ka band</td>
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<tr>
<td>PIM-free Performance</td>
<td>Proven from UHF to Ka bands at high incident power levels</td>
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<tr>
<td>Aperture Sizes</td>
<td>1 to 25 meters</td>
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<tr>
<td>Ka Band Aperture Sizes</td>
<td>1 to 9 meters</td>
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<tr>
<td>f/D Requirement</td>
<td>Any focal ratio requirement</td>
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<tr>
<td>Mounting Options</td>
<td>Center-mounted or edge-mounted rib reflectors for prime focus or offset antenna geometries</td>
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<tr>
<td>Shadowing</td>
<td>Up to 85% optical transparency</td>
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About Harris Corporation

Harris Corporation is a leading technology innovator, solving customers’ toughest mission-critical challenges by providing solutions that connect, inform and protect. Harris supports government and commercial customers around the world. Learn more at harris.com.