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What we do:

- System design from 1GHz up to 70GHz
- Single- and multiband feed systems
- Antenna design and performance simulation
- Switching & combining systems
- Standard waveguide components

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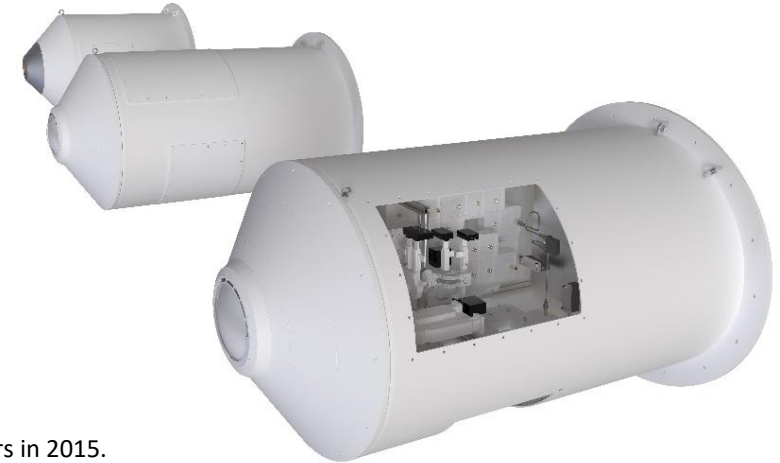
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Latest Generation of Multiband (S/X/K) Feed System

In recent years, the space industry has been pushing ahead with its plans for future lunar mission. This requires new communications capabilities that enable not only signal reception but also the broadband transmission of data signals. For this purpose, the K-band frequency range from 22.55GHz to 23.15GHz has been allocated.

MIRAD microwave would like to offer its clients the possibility of equipping their antennas with this new functionality and therefore is developing the third generation of its multiband feed system including suitable antenna optics. The latest design combines all features of its previous versions, but also includes the transmit capability in the 23GHz band. Further, the transmit power handling capabilities have been improved to provide sufficient EIRP in all frequency bands.



The first generation of the feed system has been designed and delivered to our customers in 2015.

This initial design combines the three S-, X- & K-band frequency ranges in one single system and has been installed first into a remote sensing antenna in a German satcom teleport. This design provides signal transmission and reception for TT&C purposes in S-band (2.025GHz to 2.120GHz & 2.20GHz to 2.30GHz), while high data rate signals can be received in X- and K-band (7.60GHz to 8.50GHz & 25.50GHz to 27.00GHz). Furthermore, S- & X- receive bands provide the capability of TEM tracking while K-band is equipped with a TE21 monopulse tracking coupler, allowing the antenna focusing on LEO and GEO satellites.

In response to customers demand for the need of additional signal transmission in X-band, MIRAD decided to design a second version of the multiband feed in 2020. Based on the first version, the further development combines the mentioned frequency bands with the possibility of signal transmission in the range between 7.145GHz and 7.250GHz. A further improvement on the second feed generation is the implementation of TE21 monopulse tracking capability to the S-band frequency range to improve the tracking capability especially for LEO satellites or newly launched spacecraft.

With the latest development, MIRAD is now optimizing and adapting the multiband feed system and is therefore ready to provide solutions for the need of future communication.

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