

Improve In-Flight Connectivity to Wireless Networks



Typical Applications

- Wide-body aircraft
- Single-aisle aircraft
- Picocells for mobile phone coverage
- Wi-Fi 802.11 a/b/g/n/ac and WiMAX
- Connectivity to Bluetooth, DECT, DECT2, Globalstar, GSM, IRIDIUM Sat, MMS, PDC, and TETRA protocols

Benefits

- Uniform signal propagation for wireless access throughout the entire cabin
- Reliable access across a broad range of frequencies with a single antenna
- Reduced costs with single hardware set and cables that require no maintenance for the lifetime of the aircraft
- Outstanding flame and smoke protection with inherently flame-retardant materials
- Easy installation for new production and retrofit applications in both single-aisle and wide-body aircraft
- Increased flexibility with rugged cut-resistant and abrasion-resistant construction
- Reduced exposure to wireless radiation

Today's airline passengers expect to have easy access to Internet servers, email, and in-flight entertainment while airborne. GORE® Leaky Feeder Antennas improve signal propagation while reducing the amount of hardware required on the plane. These antennas provide reliable connectivity to different wireless systems, including picocells for mobile phone coverage and access points for airborne Wi-Fi. Ideal for both wide-body and single-aisle passenger aircrafts, Gore's antennas significantly reduce dead spots, enabling passengers to connect to wireless networks throughout the cabin.

The inherently flame-retardant materials used in the construction of GORE® Leaky Feeder Antennas meet the flame and smoke toxicity specifications of FAR Part 25.1359(d) and Airbus ABD0031 without added flame retardants.



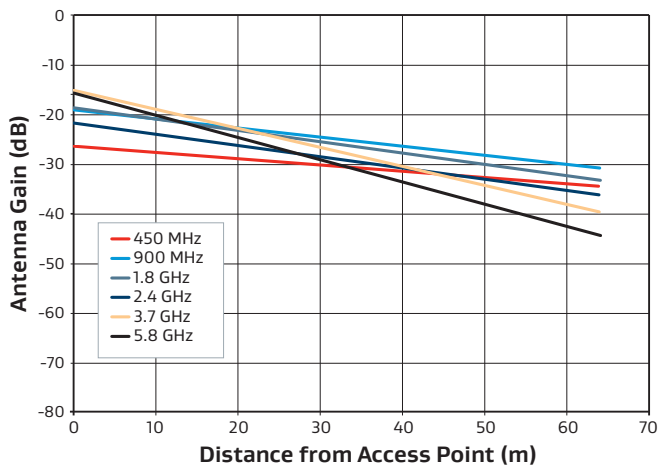
Improved Connectivity

GORE® Leaky Feeder Antennas provide consistent connectivity across a broad frequency range — from 400 megahertz up to 6 gigahertz — making the antennas compatible with numerous communication standards.

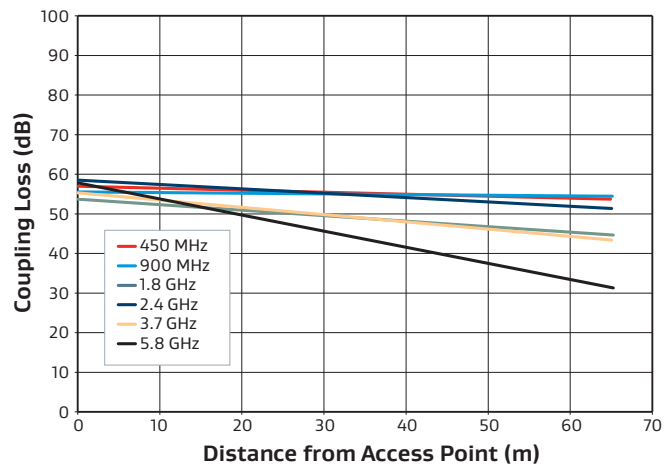
With a single antenna installed along the length of the cabin, passengers can access wireless networks for their laptops, tablets, mobile phones, and in-flight entertainment systems regardless of their location in the cabin. These antennas dramatically reduce dead spots because of the proprietary technology that maintains excellent antenna gain and coupling loss over a broad range of frequencies and antenna lengths (Figures 1-6) as measured according to IEC 61196-4, Free Space Method.

GORE® Leaky Feeder Antennas

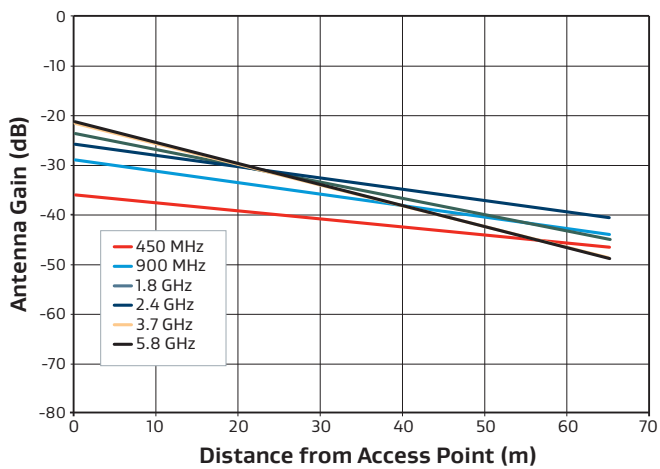
**Figure 1: Antenna Gain —
GORE® Leaky Feeder Antenna 355**



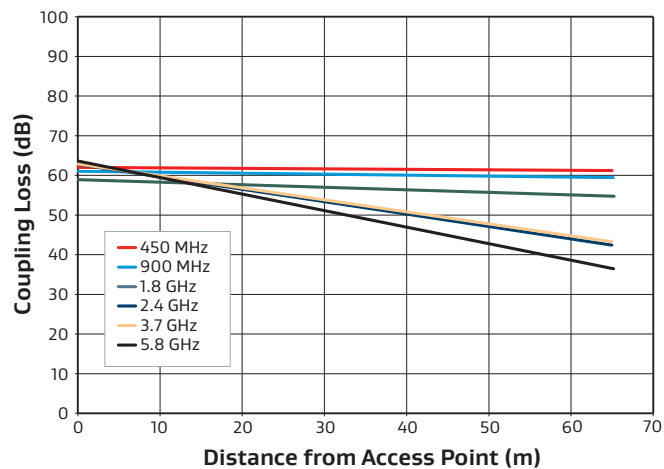
**Figure 2: Coupling Loss —
GORE® Leaky Feeder Antenna 355**



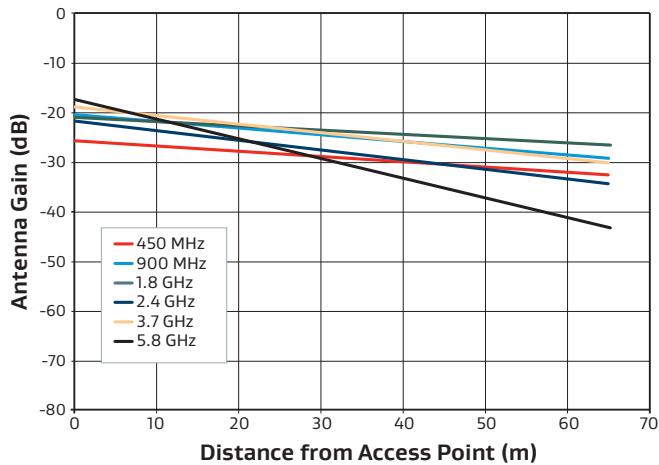
**Figure 3: Antenna Gain —
GORE® Leaky Feeder Antenna 280**



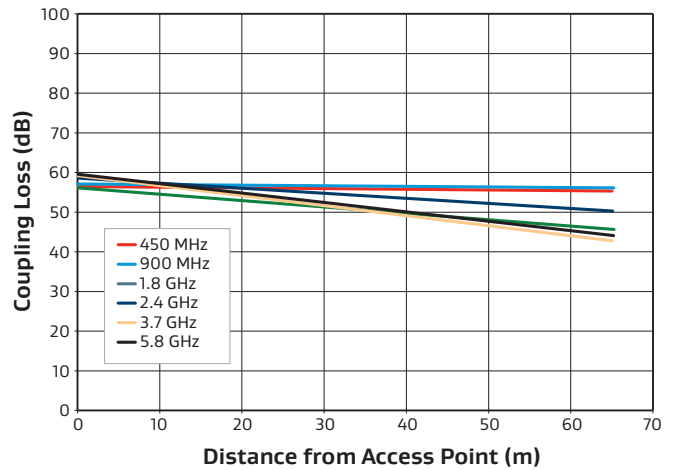
**Figure 4: Coupling Loss —
GORE® Leaky Feeder Antenna 280**



**Figure 5: Antenna Gain —
GORE® Leaky Feeder Antenna 500**



**Figure 6: Coupling Loss —
GORE® Leaky Feeder Antenna 500**



Durable Construction

The engineered fluoropolymers used in the construction of GORE® Leaky Feeder Antennas are inherently flame-retardant. They meet Airbus ABD0031 and FAR Part 25.1359(d) specifications for flame and smoke toxicity, which ensures reliable flame protection. These materials are also resistant to abrasion and cut-through, reducing the potential for damage during installation.

Reduced Costs for Wireless Access

Broadband technology used in aircraft generally requires separate equipment for each wireless protocol. GORE® Leaky Feeder Antennas enable integrated hardware to run multiple protocols through a single antenna, reducing the quantity of wireless-N access points (N-WAPs) required to ensure signal coverage. These lightweight antennas reduce equipment costs by offering a single solution that provides connectivity for a variety of electronic devices. Because of their durable construction, GORE® Leaky Feeder Antennas do not require any maintenance for the life of the aircraft, further reducing operating costs.



Table 1: Product Specifications

Electrical

Property	LFA280	LFA355	LFA500
Operating Voltage (V RMS)		300	
Impedance (ohms)		50 +5/-2	
Frequency Range (MHz)		400 to 6000	

Mechanical / Environmental

Nominal Cable Diameter (mm)	6.5	8.1	11.7
Minimum Bend Radius (mm)	40	50	70
Operating Temperature Range (°C)		-55 to 85	
Maximum Weight (g/m)	72	85	153
Flame and Smoke Toxicity	Airbus ABD0031 and FAR Part 25.1359(d)		

Ordering Information

GORE® Leaky Feeder Antennas are available in a variety of diameters, lengths, and constructions. For assistance in selecting the right antennas for your application, contact your Gore sales associates or visit [gore.com](https://www.gore.com).

Information in this publication corresponds to W. L. Gore & Associates' current knowledge on the subject. It is offered solely to provide possible suggestions for user experimentations. It is NOT intended, however, to substitute for any testing the user may need to conduct to determine the suitability of the product for the user's particular purposes. Due to the unlimited variety of potential applications for the product, the user must BEFORE production use, determine that the product is suitable for the intended application and is compatible with other component materials. The user is solely responsible for determining the proper amount and placement of the product. Information in this publication may be subject to revision as new knowledge and experience become available. W. L. Gore & Associates cannot anticipate all variations in actual end user conditions, and therefore, makes no warranties and assumes no liability in connection with any use of this information. No information in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right.

NOTICE — USE RESTRICTIONS APPLY. Not for use in food, drug, cosmetic or medical device manufacturing, processing, or packaging operations.

GORE, *Together, improving life*, and designs are trademarks of W. L. Gore & Associates © 2022 W. L. Gore & Associates