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Ligado's Pending Applications Resolve All Interference Issues and Will Allow the U.S. to Have Both a Resilient GPS System and Vital Spectrum for 5G.

Agreements With GPS Industry

Ligado has technical operating agreements with the 5 leading GPS manufacturers.

Created GPS Guardband

Ligado agreed to relinquish the right to use the 10 MHz downlink channel closest to the GPS band. This creates a large guardband that protects GPS.

Reduced Power

Ligado reduced its power by 99% to the level recommended by DOT and FAA to protect certified aviation.

42 dBW 15,850W	32 dBW 1,585W	Up to 13 dBW 20W	**9.8 dBW 10W**
Maximum power (EIRP) authorized in the 2010 ATC Order	Maximum power (EIRP) as agreed to in 2015 by major GPS companies	Ligado Analysis: Maximum power (EIRP) to protect Certified Aviation Receivers (safety of life)	Per DOT Maximum power (EIRP) to protect Certified Aviation Receivers (safety-of-flight)

Testing Confirms Ligado's Plan Works

Tests conducted by the National Advanced Spectrum and Communications Test Network (NASCTN), the DOD and DOC-sponsored lab, confirm GPS and Ligado can coexist.

FCC Approval of Ligado Applications will:

Create U.S. Jobs

Advance U.S. Global Competitiveness in 5G

Spur Infrastructure Investment in the U.S.

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Ligado's Collaboration with Stakeholders

1

Ligado updated its operational plan three times, in 2015, 2016 and 2018, to reflect the company's commitment to protect GPS and act upon input from public and private sector stakeholders. Between 2015-2018, the company reduced its downlink power by 99.4%.

2

Ligado developed a 250-foot radius with input from the Federal Aviation Administration (FAA), the expert agency with responsibility for ensuring safety and regulating our national airspace. The U.S. Department of Transportation (DOT) GPS Adjacent Band Compatibility Assessment Final Report references and provides reasoning for this radius more than 15 times throughout the assessment and the report's sensitivity analysis is based solely on the 250-foot radius.

3

Ligado's use of the 250-foot radius will not impact fixed wing because FAA regulations prohibit them from coming any closer than 500 feet to any obstacle. Federal regulations require these aircraft to fly 1000 feet over the highest obstacle in a city/town/populated area within a 2,000 foot horizontal radius of the aircraft and at a minimum 500-feet altitude in rural areas and 500-feet horizontal radius from any person, vessel, vehicle, or structure. A 250-feet radius is clearly well below —half or less than half—what the FAA allows. Additionally, for helicopters flying at close distances to ground objects, pilots rely on visual references to spot trees, buildings, and towers, not GPS equipment.

4

Ligado's plan for 9.8 dBW operation power and 250-foot radius are the result of extensive analysis by the FAA and both are based on long-standing FAA standards. The DOT and FAA have invested significant public resources to determine safe and appropriate standards, and both agencies have deemed it the appropriate level to protect certified aviation GPS receivers under the most restrictive conditions.