

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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**Intel Corporation**  
Petitioner

v.

**Qualcomm Incorporated**  
Patent Owner

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Case IPR2019-00128  
Patent 9,154,356

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**PRELIMINARY PATENT OWNER RESPONSE TO PETITION FOR  
*INTER PARTES* REVIEW PURSUANT TO 37 C.F.R. § 42.107**

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## I. INTRODUCTION

Intel Corporation (“Intel” or “Petitioner”) seeks review of claims 1, 7, 8, 11, 17, and 18 of U.S. Patent No. 9,154,356 (the “’356 Patent”) based on anticipation and obviousness grounds that rely on the same or substantially the same references or arguments previously presented to the Patent Office during examination. U.S. Patent Application Publication No. 2012/0056681 (“Lee”) – the primary reference in this petition – was presented to and considered by the Patent Office during prosecution of the application giving rise to the ’356 Patent. But Lee was not merely disclosed – Lee was discussed in detail in an International Search Report and Written Opinion that rejected related claims in a PCT application as lacking novelty and inventiveness. This International Search Report and Written Opinion was also presented to and considered by the Patent Office, and the Examiner ultimately allowed the ’356 Patent. The only secondary reference Petitioner relies on is the same in all relevant aspects as other art presented to and considered by the Patent Office during examination. Accordingly, the Board should exercise its discretion under 35 U.S.C. §325(d) to deny institution.

The Board should alternatively exercise its discretion under 35 U.S.C. §314(a) to reject the Petition as redundant to other contemporaneously-filed petitions challenging the same claims. IPR2019-00047 and IPR-00048 challenge largely the same claims, with substantially the same arguments. IPR2019-00047 presents an

anticipatory ground that overlaps with the present Petition’s anticipatory ground based on Lee. Petitioner makes no attempt to explain how Lee is more relevant than or differs from the primary reference in IPR2019-00047. Moreover, Petitioner relies on the same secondary reference across all three petitions to allegedly plug the same hole in each primary reference. Thus, each ground presented in this Petition is cumulative to the arguments Petitioner advances in IPR2019-00047 and IPR2019-00048.

The Board should not reward Petitioner for its redundant and cumulative attacks but should instead exercise its discretion under 35 U.S.C. §§ 314(a) or 325(d) to deny institution.

## **II. THE ’356 PATENT AND ITS PROSECUTION HISTORY**

### **A. Overview of the ’356 Patent**

The ’356 Patent, titled “Low Noise Amplifiers for Carrier Aggregation,” generally relates to the design and operation of amplifiers in a wireless device receiving radio frequency (RF) signals employing carrier aggregation.

Receiving signals that employ carrier aggregation, a communication technique that Qualcomm pioneered, allows a mobile device to increase the bandwidth available to a user for receiving the user’s desired content. With carrier aggregation, data is split up and transmitted over multiple frequencies (carriers) to create more bandwidth for the device. Carrier aggregation therefore allows more

data to be transmitted more quickly than traditional single-frequency methods. However, a typical mobile device is not always receiving RF signals employing carrier aggregation. For example, sometimes a mobile device may receive RF signals on a single carrier, and at other times it receives no RF signals at all. One aspect of the invention of the '356 Patent is a receiver design that offers the flexibility of activating circuitry to receive a signal employing carrier aggregation when needed and deactivating that circuitry when it is not needed. By allowing flexibility of circuit components between carrier aggregation and non-carrier-aggregation modes, a mobile device can conserve power when less bandwidth is needed, and provide increased bandwidth to the user when desired.

Aspects of the '356 Patent may be found in the RF transceiver of mobile devices. The RF transceiver is a component that receives radio-frequency (RF) signals transmitted over the air (which can be at frequencies in the MHz to GHz ranges) and converts the RF signals to baseband signals that can be provided to digital circuitry for processing, for example, to recover user data. The RF transceiver is connected to the antenna that receives the RF signals through RF front-end circuitry, which prepares the received signals for conversion to baseband signals, such as by filtering the signals.

The '356 Patent's claims are directed to an RF receiver (for example, within an RF transceiver) with two amplifiers that separately amplify a common input RF

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