

**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 IPR2018-01240  
Patent 8,698,558

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**PATENT OWNER RESPONSE TO PETITION FOR *INTER PARTES*  
REVIEW PURSUANT TO 37 C.F.R. § 42.220**

## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
II.	THE '558 PATENT AND ITS PROSECUTION HISTORY .....	3
	A. Overview of the '558 Patent.....	3
	B. Prosecution History of the '558 Patent .....	7
III.	CLAIM CONSTRUCTION .....	8
IV.	LEVEL OF ORDINARY SKILL IN THE ART .....	9
V.	OVERVIEW OF THE CITED REFERENCES .....	10
	A. Overview of Chu .....	10
	B. Overview of Choi 2010 .....	13
	C. Overview of Hanington.....	16
	D. Overview of Myers.....	18
VI.	GROUND I OF THE PETITION SHOULD BE DISMISSED BECAUSE IT IS BASED ON AN UNSUPPORTABLE CLAIM INTERPRETATION .....	21
VII.	GROUNDS I AND II OF THE PETITION SHOULD BE DISMISSED BECAUSE PETITIONER HAS FAILED TO DEMONSTRATE A MOTIVATION TO COMBINE CHU AND CHOI 2010.....	31
VIII.	GROUND II OF THE PETITION SHOULD BE DISMISSED BECAUSE CHOI 2010 TEACHES AWAY FROM “SELECTIVE BOOST” AND PETITIONER HAS FAILED TO DEMONSTRATE A MOTIVATION TO COMBINE MYERS WITH CHU, CHOI 2010, AND HANINGTON .....	38
	A. Choi 2010 Requires A Constant Boosted Supply Voltage And Teaches Away From “Selectively Boosting” A Supply Voltage.....	38
	B. Petitioner Failed To Demonstrate A Motivation To Combine Myers With Chu, Choi 2010, And Hanington.....	42
IX.	CONCLUSION.....	50

Pursuant to the Board’s Decision – Institution of *Inter Partes* Review (Paper 9) (“Institution Decision”), entered February 6, 2019 – Patent Owner Qualcomm, Inc. (“Qualcomm” or “Patent Owner”) submits this Response in opposition to the Petition for *Inter Partes* Review of U.S. Patent No. 8,698,558 (the “’558 Patent”) filed by Intel Corporation (“Intel” or “Petitioner”).

## I. INTRODUCTION

Petitioner raises two grounds challenging only two claims (claims 10 and 11) of the ’558 Patent. Ground I is directed towards independent claim 10, which recites in relevant part “a P-channel metal oxide semiconductor (PMOS) transistor [having]... a source that receives the boosted supply voltage or the first supply voltage.” A person of ordinary skill in the art (“POSA”) would understand this limitation as requiring a “selective boost.” Because Petitioner makes no attempt to address a selective boost, the Board should dismiss Ground I.

Moreover, Grounds I and II rely upon the combination of Chu, Choi 2010, and Hanington, with Ground II additionally relying on Myers. Both grounds are flawed because Petitioner has failed to meet its burden of establishing a motivation to combine Chu, a reference striving to increase the efficiency of a power amplifier, with Choi 2010, a reference striving to prevent the degradation of output power at the cost of efficiency. The prior art is silent regarding *how* to combine Chu and Choi 2010 in a manner that achieves the objectives of both. A POSA therefore would not

be motivated to combine these disparate teachings, and Petitioner has failed to meet its burden under both grounds.

Petitioner additionally fails to meet its burden of establishing a motivation to combine Chu, Choi 2010, and Hanington with Myers. Choi 2010 is premised on building a circuit that requires a constant boosted voltage supply to its linear amplifier. Petitioner, recognizing that Chu, Choi 2010, and Hanington fail to disclose anything relating to a selective boost, relies on Myers to disclose these features in dependent claim 11. Choi 2010, however, teaches away from using multiple voltage sources because the entire premise of Choi 2010 is to use a constant boosted supply voltage in order to achieve its objective of preventing the degradation of output power. And even if the Board were to find that Choi 2010 does not rise to the level of teaching away, a POSA would not be motivated to modify Choi 2010 with Myers because doing so would undercut the benefits Choi 2010 achieves. Furthermore, Myers does not disclose a linear envelope amplifier and relates only to an older power-tracking paradigm that differs significantly from Chu and Choi 2010. Accordingly, a POSA would not be motivated to combine Myers with Chu, Choi 2010, and Hanington.

For at least these reasons, the Board should confirm the validity of claims 10 and 11 of the '558 Patent.

## II. THE '558 PATENT AND ITS PROSECUTION HISTORY

### A. Overview of the '558 Patent

The '558 Patent describes and claims inventions directed to managing the power associated with transmitting radio frequency (“RF”) signals from a mobile device. Ex. 1301 at 1:5-31. The '558 Patent teaches improvements over known power management schemes by employing a novel form of “envelope tracking.” *Id.* at Title; 3:57-60. The '558 Patent’s power management scheme achieves substantial power savings in mobile device transmitters, thereby extending a device’s battery life. *Id.* at 3:46-48.

In wireless communication systems, mobile devices communicate by transmitting encoded data signals. Ex. 1301 at 1:11-17. Before transmitting through a communications channel, such encoded data signals are first conditioned to generate RF output signals. *Id.* Such conditioning typically includes an amplification step performed by a power amplifier (a “PA”) that provides a high transmit power. *Id.* at 1:21-26. A desirable characteristic of mobile device power amplifiers is an ability to provide high transmit power with high power-added efficiency (“PAE”) and good performance even when the device’s battery is low. *Id.*

Before the priority date of the '558 Patent, typical PAs in a mobile device were supplied with a constant power supply voltage, regardless of the PA’s output power. The '558 Patent illustrates this in Figure 2A, below with annotation:

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