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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.

ParkerVision, Inc.  
Patent Owner

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Case IPR2020-01265

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**PETITION FOR *INTER PARTES* REVIEW OF  
U.S. PATENT NO. 7,110,444  
CHALLENGING CLAIMS 1, 3, 5**

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Petitioner Intel Corporation (“Intel”) respectfully requests *inter partes* review (“IPR”) of claims 1, 3, and 5 of USP 7,110,444 (“’444 patent”) (Ex. 1001).

## I. INTRODUCTION

The ’444 patent, which claims a priority date of August 4, 1999, is directed to methods for performing down-conversion, a process for converting a high-frequency signal to a low-frequency signal (called the “baseband signal”) that can be processed by a mobile device. Down-conversion was indisputably well-known before the ’444 patent, and the structure recited in the challenged claims for performing down-conversion—including the two elements that Patent Owner added to obtain allowance—was also well-known. Thus, the challenged claims are invalid.

Electronic devices, like computers and cellphones, process data using baseband signals. But baseband signals cannot, as a practical matter, be transmitted wirelessly from one device to another. Accordingly, a baseband signal must be “modulated” onto a high-frequency radio-frequency (RF) signal called a “carrier” signal to be transmitted wirelessly. When that high-frequency signal is received by an electronic device, the receiving device must then “down-convert” the signal back to the low-frequency baseband signal, so that the device can process the transmitted data. This down-conversion process was indisputably

known for decades before the '444 patent.

The challenged claims recite a basic structure for performing down-conversion. Figure 70A (below)<sup>1</sup> shows a wireless device that has an antenna 7072 for receiving a high-frequency RF signal 7082:

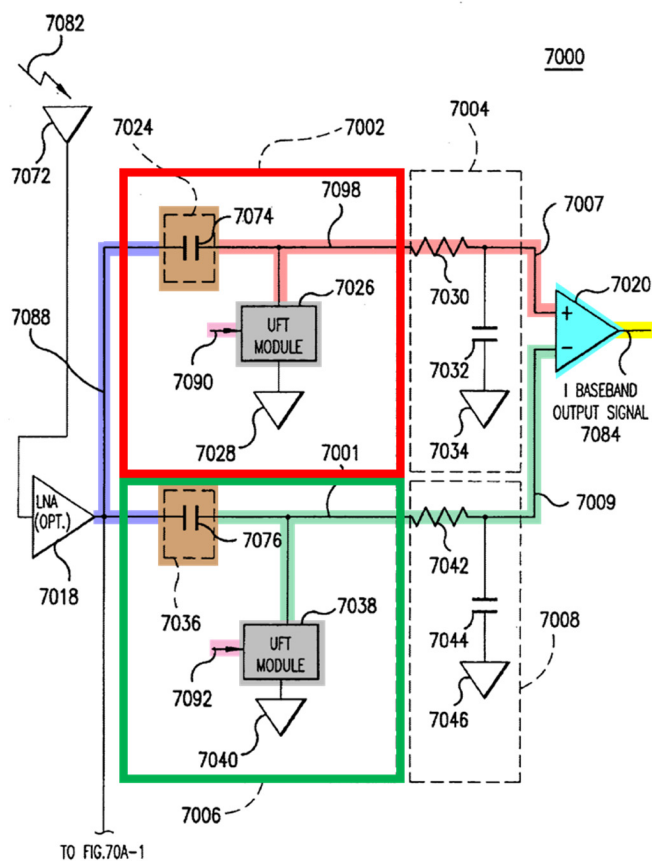


FIG.70A

Ex. 1001-'444, Fig. 70A

<sup>1</sup> All annotations and emphasis have been added unless otherwise noted.

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