

Declaration in Support of Petition for IPR of U.S. Patent No. 7,239,111

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TCT MOBILE (US), INC.; TCT MOBILE (US) HOLDINGS, INC.; HUIZHOU TCL MOBILE  
COMMUNICATION CO. LTD.; AND TCL COMMUNICATION, INC.

Petitioners

v.

FUNDAMENTAL INNOVATION SYSTEMS INTERNATIONAL LLC,  
Patent Owner

U.S. Patent No. 7,239,111

**DECLARATION OF R. JACOB BAKER, PH.D., P.E.,  
REGARDING U.S. PATENT NO. 7,239,111**

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## I. INTRODUCTION

1. My name is R. Jacob Baker Ph.D., P.E., and I am a Professor of Electrical and Computer Engineering at the University of Nevada, Las Vegas. I have prepared this declaration as an expert witness on behalf of Petitioners TCT MOBILE (US), INC.; TCT MOBILE (US) HOLDINGS, INC.; HUIZHOU TCL MOBILE COMMUNICATION CO. LTD.; and TCL COMMUNICATION, INC. In this declaration, I will give my opinion as to whether claims 1-14, and 16-18 of U.S. Patent No. 7,239,111 (“the ’111 patent”) (Ex. 1001) are valid. I also provide herein the technical bases for these opinions, as appropriate.

2. This declaration contains statements of my opinions formed to date, and the bases and rationale for these opinions. I may offer additional opinions based on further review of materials in this case, including opinions and/or testimony of other expert witnesses.

3. For my efforts in connection with the preparation of this declaration, I have been compensated at my usual and customary rate for this type of consulting activity. My compensation is in no way contingent on the results of these or any other proceedings related to the ’111 patent.

### A. Educational and Work Background

4. My qualifications generally are set forth in my *curriculum vitae*, which is submitted as Ex. 1004.

5. I have been working as an Engineer since 1985 and I have been teaching Electrical and Computer Engineering courses since 1991. I am currently a Professor of Electrical and Computer Engineering at the University of Nevada, Las Vegas (“UNLV”). I am also currently an industry consultant for Freedom Photonics. I am the named inventor on over 150 U.S. patents resulting from my industry work.

6. I received the B.S. and M.S. degrees in Electrical Engineering from UNLV in 1986 and 1988, respectively. I received my Ph.D. in Electrical Engineering from the University of Nevada, Reno, in 1993.

7. My doctoral research, culminating in the award of a Ph.D., investigated the use of power MOSFETs in the design of very high peak power, and high-speed, instrumentation. I developed techniques to reliably stack power MOSFETs to switch higher voltages, that is, greater than 1,000 V and 100 Amps of current with nanosecond switching times. This work was reported in the paper entitled “Transformerless Capacitive Coupling of Gate Signals for Series Operation of Power MOSFET Devices,” published in the IEEE Transactions on Power Electronics. The paper received the Best Paper Award in 2000.

#### Industry Experience

8. I have done technical and expert witness consulting for over 120 companies since I started working as an engineer in 1985. From 1985 to 1993 I

worked for EG&G Energy Measurements and the Lawrence Livermore National Laboratory designing nuclear diagnostic instrumentation for underground nuclear weapon tests at the Nevada test site. During this time, I designed, and oversaw the fabrication of, over 30 electronic and electro-optic instruments including high-speed cable and fiber-optic receiver/transmitters, PLLs, frame and bit-syncs, data converters, streak-camera sweep circuits, Pockel's cell drivers, micro-channel plate gating circuits, charging circuits for battery backup of equipment for recording test data, and analog oscilloscope electronics.

9. My work during this time, as one example, had a direct impact on my doctoral research work using power MOSFETs, subsequent publishing efforts, and industry designs. In addition to the 2000 Best Paper Award from the IEEE Power Electronics Society, I published several other papers in related areas while working in industry. I hold a patent, Patent No. 5,874,830, in the area of power supply design, titled, "Adaptively biased voltage regulator and operating method," which was issued on February 23, 1999. I have designed dozens of linear and switching power supplies for commercial products and scientific instrumentation.

10. I am a licensed Professional Engineer and have extensive industry experience in circuit design, fabrication, and manufacture of Dynamic Random Access Memory (DRAM) semiconductor integrated circuit chips, Phase-Change Random Access Memory (PCRAM) chips, and CMOS Image Sensors (CISs) at

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