UNITED STATES PATENT AND TRADEMARK OFFICE
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BEFORE THE PATENT TRIAL AND APPEAL BOARD
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SEMICONDUCTOR COMPONENTS INDUSTRIES, LLC d/b/a
ON SEMICONDUCTOR
Petitioner,

v.

POWER INTEGRATIONS, INC.
Patent Owner.

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Case No. IPR2016-01600
Patent 7,834,605

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**PETITIONER'S SUPPLEMENTAL RESPONSE TO PATENT OWNER'S
MOTION TO AMEND**

Petitioner ON Semiconductor respectfully submits this supplemental response in view of *Aqua Products, Inc. v. Matal*, No. 2015-1177 (Fed. Cir. Oct. 4, 2017). Because *Aqua Products* does not affect Petitioner's arguments that the cancellation of claims 1 and 2 is moot and that Patent Owner proposes an unreasonable number of substitute claims, those arguments are not addressed here.

I.   Under the correct construction of "first state," the substitute claims add new subject matter and enlarge the scope of the claims

Proposed substitute claim 13 recites, in relevant part:

13. (Proposed substitute for original claim 1) A power supply regulator, comprising:

a comparator having a first input coupled to sense a voltage representative of a current flowing through a switch during an on time of the switch, the comparator having a second input coupled to receive a variable current limit threshold that increases during the ***on time of the switch***;

. . .

wherein, for each of a plurality of consecutive control signal cycles each having a ***first state*** and a second state, the variable current limit threshold increases during ***at least a portion of the first state*** of each control signal cycle and decreases during at least a portion of the second state of each control signal cycle.

Paper 16, App. A at 1 (emphasis added).

One key issue is the proper construction of "first state," and in particular whether the first state is coextensive with the "on time of the switch." In view of

the *Aqua Products* decision, Petitioner proposes a construction of "first state."

Under that construction, the substitute claims are improper under 35 U.S.C. §

316(d)(3) because they add new matter and broaden the scope of the claims.

A. **"First state" should be construed to occur only during the "on time of the switch"**

Properly construed, the "first state" of each control signal cycle is the state

of the control signal cycle that occurs during, and is coextensive with, the on time

of the switch and, consequently, the "second state" is the state of each control

signal cycle that occurs during, and is coextensive with, the off time of the switch.

These are the only constructions even arguably supported by the intrinsic record.

The terms "first state" and "second state" do not appear anywhere in the

original application. Patent Owner, however, explicitly argued in its Motion to

Amend that "first state" and "second state" as recited in claim 13 "correspond to

the on and off times of the switch." Paper 16 at 11 ("as recited in the element [of

claim 13] 'the control signal [is] to be coupled to a control terminal of the switch to

control switching of the switch'; accordingly, the 'first state' and 'second state' of

the control signal correspond to the on and off times of the switch"); *see also* Ex.

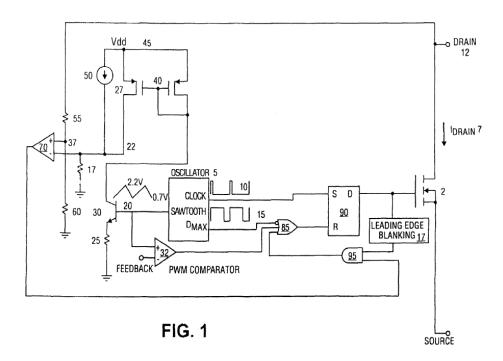2010, Kelley Decl. at ¶ 63 (same).[1] In its reply, Patent Owner again correlated the

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[1] Because claim 13 recites that the current limit threshold increases "during at least

a portion of the first state" and, as discussed below, the '642 Application teaches

control signal states with on and off times of the switch, albeit less directly:

> The 'first state' will begin when the 'Clock' signal shown in FIG. 1
> goes high . . . the 'second state' will occur when the latch 90 is reset
> via the 'R' input of the latch…

Paper 21 at 9. In Figure 1 of the '642 Application (reproduced below), when the "Clock" signal goes high, the S input to the latch goes high, and the D output (which Patent Owner argues is the "control signal" of claim 13) also goes high, thus turning on the switch. Conversely, when the latch 90 is reset via the "R" input, the D output goes low, and the switch is turned off.

FIG. 1

Thus, if the first state begins when the clock signal goes high (turning on the

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that the current limit threshold increases when the switch is on, the first state (not the second state) must correspond to the on time.

switch) and the second state begins when the latch is reset (turning off the switch),
as Patent Owner argues, the first state occurs only during the on time of the switch.
Patent Owner offers no other support for its newly-added limitations "first state
and second state." To the extent the specification discloses a "first state" and a
"second state" of the control signal cycle, therefore, those must correspond to the
on time and off time of the switch, respectively.

Despite equating "first state" and "on time of the switch," Patent Owner
argues that those limitations are "different elements, and each is entitled to its
broadest reasonable interpretation." Paper 21 at 11. Patent Owner's argument is
beside the point. Although the state of the control signal cycle and the "on time of
the switch" controlled by that signal may constitute different elements, the first
state must occur during the on time of the switch. If that is not so, then there is no
support for the "first state and second state" limitation in the original application.
Thus, "first state" can only be supported by the original application if construed as
"the state of the control signal cycle that occurs during, and is coextensive with,
the on time of the switch."

B.   The "portion" limitation is new matter

Under the proper construction of "first state," the newly-added limitation
"the variable current limit threshold increases during at least a portion of the first
state of each control signal cycle" (hereinafter, "the 'portion' limitation") is

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