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EXAMINER	
CASEY, LIAM R	

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Please find below and/or attached an Office communication concerning this application or proceeding.

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DIRK HAMMERSCHMIDT

Appeal 2019-000440
Application 13/779,900
Technology Center 2800

Before JEFFREY T. SMITH, MICHAEL G. MCMANUS, and JANE E. INGLESE, *Administrative Patent Judges*.

SMITH *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1–4, 6, 7, and 10–24. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

The following rejections are presented for appeal:

I. Claims 1, 2, 7, 12, 14–16, 21, and 22 rejected under 35 U.S.C. 102(a) as anticipated by Orion (US 2012/0119568 A1, publ. May 17, 2012).

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[1] We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Infineon Technologies AG. (Appeal Br. 1.)

II. Claims 3 and 4 rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Orion and Huot (US 2011/0124303 A1, publ. May 26, 2011).

III. Claims 6, 11, 17, 18, and 24 rejected under 35 U.S.C. § 103(a) as unpatentable over Orion.

IV. Claim 10 rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Orion and Huang (US 2005/0116745 A1, publ. June 2, 2005).

V. Claims 13 and 20 rejected under 35 U.S.C. § 103(a) as unpatentable over the combination Orion and Filter Capacitor (Filter Capacitor-Explained (accessed December 24, 2016) https://web.archive.org/web/20121114213456/http://www.learningaboutelectronics.com/...).

VI. Claims 19 and 23 rejected under 35 U.S.C. § 103(a) as unpatentable over the combination Orion and Pickerd (US 2007/0041512 A1, publ. Feb. 22, 2007).

Appellant's invention relates to a measurement system that includes sensors having emulated line adaptation. The sensors can be utilized in various control systems that perform automotive functions. (Spec. ¶¶ 1, 11.) Claim 1 is illustrative of the subject matter on appeal and is reproduced from Appellant's Brief below:

> 1. A measurement system comprising:
> a signal bus;
> an electronic control circuit coupled to the signal bus; and
> at least one sensor with an emulated line adaptation circuit coupled to the signal bus, the emulated line adaptation circuit configured to adapt current consumption associated with the signal bus according to an adaptation amount for a selected

impedance and a selected frequency range to provide the selected impedance;

wherein the line adaptation circuit comprises a processing circuit, a supply measurement circuit and an emulated sensor filter circuit, wherein the emulated sensor filter circuit is configured to filter a supply voltage according to the selected impedance and the selected frequency range, the supply measurement circuit is configured to measure the filtered supply voltage and the processing circuit is configured to generate the adaptation amount based on the measured filtered supply voltage.

OPINION

Anticipation Rejection

We limit our discussion to independent claims 1, 14, and 21. Claims 1, 2, 7, 12, 14–16, 21, and 22 are rejected under 35 U.S.C. 102(a) as anticipated by Orion.

The Examiner finds Orion discloses a sensor with an emulated line adaptation circuit coupled to a signal bus as required by the independent claims. The Examiner specifically states:

> Orion discloses a measurement system comprising:
> a signal bus (wire communication link 10, Fig. 1);
> an electronic control circuit(control unit 6, Fig. 1 meets the limitation; control member 72, Fig. 6 and para. [0089]) coupled to the signal bus; and
> at least one sensor with emulated line adaptation circuit coupled to the signal bus (control member 72 includes means for measuring, Fig. 6 and para. [0087]; means 34, 36, 42 for adapting the input impedance, Abstract and Fig. 1), the emulated line adaptation circuit configured to adapt current consumption associated with the signal bus (paras. [0061]-[0064]) according to an adaptation amount for a selected impedance (drives the current generator 34 ... a variable input current I_e ... input voltage V_e divided by the value of the characteristic line impedance Z_0, para. [0089]) and a selected

frequency range (predetermined range of frequencies, para. [0009] and [0070]) to provide the selected impedance (match the input impedance Z_e to the characteristic line impedance Z_0, para. [0070]); the current consumption is associated with the signal bus because it is derived from the input current from the signal bus.

"Adaptation amount" is a non-specific term and could be the value of the impedance itself Z_0 or the quotient of the input voltage and impedance, among other possibilities. However, in view of the limitations below, it is best understood to be the quotient of input voltage and characteristic line impedance.

wherein the line adaptation circuit comprises a processing circuit (control member 72, Fig. 6 and paras. [0087] and [0089]), a supply measurement circuit (means for measuring the intermediate voltage V_{int1}, para. [0087]), and an emulated sensor filter circuit (filtering capacitor C1, Figs. 2, 6, and para. [0049]), wherein the emulated sensor filter circuit is configured to filter a supply voltage (paras. [0049], [0087], and [0089]) according to the selected impedance and the selected frequency range (matching band is notably a function of the value of the filtering capacitor C1, para. [0070]), the supply measurement circuit is configured to measure the filtered supply voltage (control member 72 measures the variations of this input voltage V_e via the means for measuring the voltage V_{int}, para. [0089]) and the processing circuit is configured to generated the adaptation amount based on the measured filtered supply voltage (control member 72 then drives the current generator 34 ... a variable input current I_e... input voltage V_e divided by the value of the characteristic line impedance Z_0, para. [0089]). The matching band is the frequency range in accordance with the selected impedance and it is a function of the value of the capacitor, so the filtering is in accordance with both impedance and frequency range. The control member must generate the adaptation amount in order to drive the current generator using it, so it inherently is or includes a processing circuit as claimed.

(Final Act. 4–5 (emphasis omitted).)

Appellant argues "Orion does not teach an at least one sensor with an emulated line adaptation circuit having a line adaptation circuit configured to adapt current consumption of a signal bus according to an adaptation amount to provide the selected impedance as in claim 1." (Appeal Br. 4 (emphasis omitted).) Appellant argues the current generator 34 modifies the variable load 36, not the consumption associated with the signal bus, and the Examiner has failed to explain how the control member 72 maintains the input impedance with the line impedance. (Reply Br. 4.)

The Examiner has failed to identify where Orion teaches an electronic control circuit coupled to the signal bus and at least one sensor with an emulated line adaptation circuit coupled to the signal bus as required by the claimed invention. The independent claims require at least one sensor to have an emulated line adaptation circuit configured to adapt current consumption for a selected impedance. However, Orion teaches a coupling system that has a means to adapt an input impedance matched to the characteristic line impedance. (Orion ¶ 111).

Further, Orion discloses an energy recovery device 24 within a device 2 for controlling an electronic switch 4. (Fig. 1). The energy recovery device 24 (Fig. 6) consumes current to recover energy. (Orion ¶¶ 42, 61). The energy recovery device 24 includes a rectifier 32, a current source 34, and a load 36. The energy recovery device 24 receives an input current I_e of constant intensity and delivers an output current I_1 of variable intensity to the control unit 6. (Orion ¶ 67). Thus, the energy recovery device 24 does not modify the current according to an adaptation amount, the energy recovery device 24 does not modify the current/intensity at the input current I_e. (Orion ¶ 61).

The energy recovery device 24 also includes rectifier 32. However, the rectifier 32 of Orion does not modify the intensity of the current crossing it, so that the intensity of the current circulating through its output terminal 48 is equal to the intensity of the first current I_1 circulating through its input terminals 28. (Orion ¶ 62).

The Examiner has also improperly relied on control member 72 to teach multiple elements of the claimed invention. Specifically, the Examiner relies on control member 72 to meet the claim requirement for a sensor, a means for measuring, a processing circuit, and a supply measurement circuit. (Ans. 2; Final Act. 4.) Consequently, the Examiner has relied on a single component to meet multiple components of the claimed invention.

For the foregoing reasons and those presented by Appellant, the Examiner has failed to establish that Orion anticipates the subject matter of independent claims 1, 14 and 21 and dependent claims 2, 7, 12, 15, 16, and 22.

Obviousness Rejections

The Examiner rejected claims 3, 4, 6, 10, 11, 13, 17–20, 23, and 24 as obvious over Orion in combination with additional prior art references. We did not sustain the Examiner's rejection of independent claims 1, 14, and 21 for the reasons presented by Appellant and given above. We, likewise, do not sustain the Examiner's decision to reject dependent claims 3, 4, 6, 10, 11, 13, 17–20, 23, and 24, since these rejections are premised on the Examiner's misinterpretation of Orion. We need not reach whether the Examiner's reliance on other references in addition to Orion for the rejection of the dependent claims was supported by the evidence of record. The

Examiner cited the additional references to address limitations different from independent claims 1, 14, and 21.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 2, 7, 12, 14–16, 21, 22	102(a)	Orion		1, 2, 7, 12, 14–16, 21, 22
3, 4	103(a)	Orion, Huot		3, 4
6, 11, 17, 18, 24	103(a)	Orion		6, 11, 17, 18, 24
10	103(a)	Orion, Huang		10
13, 20	103(a)	Orion, Filter Capacitor		13, 20
19, 23	103(a)	Orion, Pickerd		19, 23
Overall Outcome				1–4, 6, 7, 10–24

REVERSED