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Keysight Technologies, Inc. C/O CPA Global 900 Second Avenue South Suite 600 Minneapolis, MN 55402			OUTTEN, SAMUEL S	
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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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*Ex parte* GREGORY S. LEE and LEWIS R. DOVE

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Appeal 2019-000655  
Application 15/008,368  
Technology Center 2800

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Before ROMULO H. DELMENDO, KAREN M. HASTINGS, and  
N. WHITNEY WILSON, *Administrative Patent Judges*.

WILSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant<sup>1</sup> appeals under 35 U.S.C. § 134(a) from the Examiner’s  
January 25, 2018 decision finally rejecting claims 1–49 (“Final Act.”). We  
have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We affirm-in-part.

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in  
37 C.F.R. § 1.42. Appellant identifies Keysight Technologies, Inc. as the  
real party in interest (Appeal Br. 3).

### CLAIMED SUBJECT MATTER

Appellant's disclosure relates to an electrical connector which includes an inner electrical conductor, an outer electrical conductor, a dielectric region between the inner electrical conductor and the outer electrical conductor, and an electrically thin resistive layer within the dielectric region and concentric with the inner electrical conductor and the outer electrical conductor (Abstract). The electrically thin resistive layer is said to be a resistive layer configured to be transparent to a substantially transverse-electromagnetic (TEM) mode of transmission, while absorbing higher order modes of transmission (*id.*). Details of the claimed structures are set forth in representative claims 1 and 18, which are reproduced below from the Claims Appendix to the Appeal Brief:

1. An electrical connector configured to electrically couple a signal transmission line to another signal transmission line, the electrical connector comprising:
  - a first electrical conductor;
  - a second electrical conductor; and
  - an electrically thin resistive layer disposed between the first and second electrical conductors.
  
18. A signal transmission line comprising:
  - a first electrical conductor;
  - a second electrical conductor;
  - a dielectric region between the first electrical conductor and the second electrical conductor; and
  - an electrically thin resistive layer disposed within the dielectric region and disposed between the first electrical conductor and the second electrical conductor, the electrically thin resistive layer being configured to be substantially

transparent to a substantially transverse-electromagnetic (TEM) mode of transmission while substantially completely attenuating higher order modes of transmission.

## REJECTIONS

1. Claims 18 and 36 are rejected under 35 U.S.C. § 112(b) as indefinite for use of the phrase “substantially completely.”
2. Claims 1–3, 5–9, 11–14, 16–27, 29–38, and 40–49 were provisionally rejected on the grounds of nonstatutory double patenting over claims 3, 7–11, 13–16, 18, 19, 22–25, and 28–36 of Application No. 14/823,997, which matured into US 10,109,904 B2, issued October 23, 1994.
3. Claims 18–20, 22, 23, 25, 26, 30–32, 36, 37, 41, 42, 46, 47, and 49 are rejected under 35 U.S.C. § 102(a) as anticipated by Keiter.<sup>2</sup>
4. Claims 24, 34, 35, 38, 39, 44, 45, and 48 are rejected under 35 U.S.C. § 103 as unpatentable over Keiter.
5. Claims 21 and 27 are rejected under 35 U.S.C. § 103(a) as unpatentable over Keiter in view of Geissler.<sup>3</sup>
6. Claim 28 is rejected under 35 U.S.C. § 103 as unpatentable over Keiter in view of Salmela.<sup>4</sup>
7. Claims 29 and 40 are rejected under 35 U.S.C. § 103 as unpatentable over Keiter in view of Langlois.<sup>5</sup>

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<sup>2</sup> Keiter, US 3,544,928, issued December 1, 1970.

<sup>3</sup> Geissler, US 4,004,257, issued January 18, 1977.

<sup>4</sup> Salmela et al., US 2003/0151476 A1, published August 14, 2003.

<sup>5</sup> Langlois, US 5,894,197, issued April 13, 1999.

8. Claims 1–10 and 12–17 are rejected under 35 U.S.C. § 103 as unpatentable over Keiter in view of Ziegler.<sup>6</sup>

9. Claim 11 is rejected under 35 U.S.C. § 103 as unpatentable over Keiter in view of Ziegler and Langlois.

## DISCUSSION

**Rejection 1 - § 112(b).** Appellant states that they filed an amendment to address the rejection by amending the phrase “substantially completely” in claims 18 and 36 to “substantially” (Appeal Br. 5–6). However, as noted by the Examiner (Ans. 3), no such amendment was actually filed (*see*, Rule 111 Amendment, filed December 11, 2017). Accordingly, we summarily affirm the rejection under § 112(b).

**Rejection 2 – Provisional Obviousness-type Double Patenting.** Appellant does not specifically contest this rejection, stating only that a terminal disclaimer might be filed to address it in the future. Accordingly, we also summarily affirm this rejection. We note that the application which is used in the rejection has now issued as US 10,109,904. The Examiner and Appellant may wish to review the issued claims to determine if the provisional rejection is still applicable.

**Rejection 3 – Anticipation over Keiter.** Appellant argues claims 18 and 36 together (Appeal Br. 7), and does not argue other claims separately (Appeal Br. 11). Accordingly, we focus our discussion on the anticipation rejection of claim 18 over Keiter.

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<sup>6</sup> Ziegler, Jr., US 3,460,072, issued August 5, 1969.

“A prior art reference anticipates a patent claim under 35 U.S.C. § 102(b) if it discloses every claim limitation.” *In re Montgomery*, 677 F.3d 1375, 1379 (Fed. Cir. 2012) (citing *Verizon Servs. Corp. v. Cox Fibernet Va., Inc.*, 602 F.3d 1325, 1336–37 (Fed. Cir. 2010)). In this instance, Appellant contends that Keiter does not disclose “an electrically thin resistive layer disposed within the dielectric region and disposed between the first electrical conductor and the second electrical conductor,” as recited in claim 18 (Appeal Br. 6–7). The Examiner finds that this limitation is met by Keiter’s annular resistive film 22, as shown in Keiter’s FIG. 2 reproduced below:

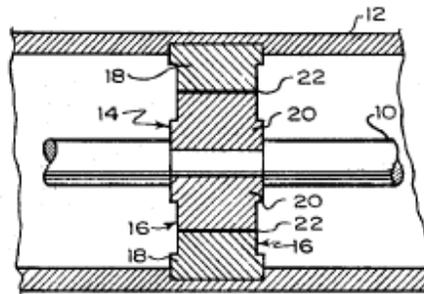


Figure 2

Keiter’s FIG. 2 is a sectional side view of a coaxial transmission line.

As explained by Appellant (Appeal Br. 7) and agreed to by the Examiner (Ans. 3–4), the phrase “electrically thin” is defined in the Specification: “As used herein, an ‘electrically thin’ layer is one for which the layer thickness is less than the skin depth  $\delta$  at the (highest) signal frequency of interest.” Spec. ¶ 35. Thus, the burden was on the Examiner to show that Keiter’s annular resistive film 22 meets this limitation.

The Examiner attempts to meet this burden with a finding that Keiter's annular resistive film inherently is electrically thin: "[T]he behavior of the resistive layer as featured in the rejection under Keiter is inherent" (Ans. 4). "It is well settled that a prior art reference may anticipate when the claim limitations not expressly found in that reference are nonetheless inherent in it. 'Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates.'" *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1349 (Fed. Cir. 2002) (citations omitted). "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations omitted).

The Examiner finds that Keiter discloses an electrically resistive film 22 with 50-400 Ohm/sq that is as small as possible which has a minimal impact on the TEM mode<sup>7</sup> (Final Act. 30–31, citing Keiter 2:9–14, 2:23–26). The Examiner further finds the signal frequency of interest is that of the TEM mode, and that to achieve the result of providing "the smallest possible loss to the normal TEM mode of the coaxial transmission line" (Keiter, 2:23–26) the annular resistive layer 22 must inherently have a thickness that is less than the skin depth at the TEM mode (Final Act. 31). The Examiner also cited several other references as evidence to support the finding of inherency:

[T]he examiner provided references to Garg et al. and Huang et al. as evidence that the resistive film of Keiter must inherently

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<sup>7</sup> The TEM mode is the transverse-electromagnetic (TEM) mode of transmission (Spec. ¶ 25).

be “electrically thin” as per the special definition provided by the appellant to a TEM mode for “minimizing loss to the TEM mode” (Keiter, col. 2 lines 23-26) or providing “the smallest possible loss to the normal TEM mode of the coaxial transmission line” (Keiter col. 2 lines 10-15) as stated by Keiter. In the case where the limitation of “electrically thin” is not met, the result is significant attenuation of the TEM mode, as evidenced by Lorenz et al., the opposite of the behavior disclosed by Keiter.

(Ans. 5).

Upon review of the arguments and evidence presented by both the Examiner and Appellant, we determine that the preponderance of the evidence of record does not support the Examiner’s finding that Keiter inherently discloses an electrically thin resistive layer as recited in claims 18 and 36. That is, the evidence of record does not support a finding that Keiter’s resistive layer 22 is necessarily an electrically thin resistive layer as recited in the claims and defined in the Specification. Although an ideal embodiment of Keiter’s disclosure might include an electrically thin resistive layer as defined in Appellant’s Specification, it would not necessarily have included such a layer. That Keiter’s resistive layer 22 may be an electrically thin resistive layer is not sufficient for a finding of inherency.<sup>8</sup>

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<sup>8</sup> Although the Examiner’s findings may support a determination that the use of an electrically thin resistance layer as defined in Appellant’s Specification would have been obvious, no such rationale has yet been presented. The Board relies on the involved parties to focus the issues and decides on those issues based on facts and arguments presented by the involved parties. *See Ex Parte Frye*, 293 F. 1013 (BPAI 2010 (precedential)).

Accordingly, we reverse the anticipation rejection of claims 18 and 36 over Keiter, as well as the anticipation rejections of those claims which depend from it. Similarly, the remaining prior art rejections rely on the same inherency finding, which we determine is deficient. Accordingly, we also reverse those rejections.

### CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>References(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
18, 36	112(b)		18, 36	
1–3, 5–9, 11–14, 16–27, 29–38, 40–49	Obviousness-type double patenting	14/823,997	1–3, 5–9, 11–14, 16–27, 29–38, 40–49	
18–20, 22, 23, 25, 26, 30–32, 36, 37, 41, 42, 46, 47, 49	102(a)	Keiter		18–20, 22, 23, 25, 26, 30–32, 36, 37, 41, 42, 46, 47, 49
24, 34, 35, 38, 39, 44, 45, 48	103	Keiter		24, 34, 35, 38, 39, 44, 45, 48
21, 27	103	Keiter, Geissler		21, 27
28	103	Keiter, Salmela		28
29, 40	103	Keiter, Langlois		29, 40
1–10, 12–17	103	Keiter, Ziegler		1–10, 12–17
11	103	Keiter, Ziegler, Langlois		11
<b>Overall Outcome</b>			1–3, 5–9, 11–14, 16–27, 29–38, 40–49	4, 10, 15, 28, 39

Appeal 2019-000655  
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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART