UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AVAYA INC., DELL INC., SONY CORP. OF AMERICA, and HEWLETT-PACKARD CO.
Petitioners

v.

NETWORK-1 SECURITY SOLUTIONS, INC.
Patent Owner

Case IPR2013-00071[1]
Patent 6,218,930
Administrative Patent Judges Joni Y. Chang, Justin T. Arbes, and Glenn J. Perry

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Patent Owner Network-1's Demonstratives
Exhibit N1-2030

Topics:

1. Ground 1: anticipation
2. Ground 2: obviousness
3. Proposed Amendment

Elements Missing from Matsuno

6. Method for remotely powering access equipment in a data network, comprising,

providing a data node adapted for data switching, an access device adapted for data transmission, at least one data signaling pair connected between the data node and the access device and arranged to transmit data therebetween, a main power source connected to supply power to the data node, and a secondary power source arranged to supply power from the data node via said data signaling pair to the access device,

1

delivering a low level current from said main power source to the access device over said data signaling pair,

2

sensing a voltage level on the data signaling pair in response to the low level current, and

controlling power supplied by said secondary power source to said access device in response to a preselected condition of said voltage level.

9. Method according to claim **6**, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

3

'930 Patent (Exh. 1001)

"low level current:"

sufficiently low that, by itself, it will not operate the access device.

Matsuno

The issue is whether *the specific current in Matsuno* is sufficient, by itself, to operate *the specific access device in Matsuno* such that it would be more than a "low level current" as recited in claim 6. Seeing ~~no indication that it is,~~ we conclude that Petitioner has made a threshold showing that Matsuno discloses delivering a "low level current."

evidence that the current is not sufficient

Avaya Decision at 17 (Paper 18)

¶ 35). Network-1 does not explain sufficiently how the converted voltage is indicative of what current would be sufficient by itself to operate network terminal device 102, or network terminal device 102 in combination with subscriber terminal 103.

Dell Decision at 16 (Paper 16)

Patent Owner Response at 12 (Paper 42); Patent Owner Response at 10 (Paper 42)

“low level current:”

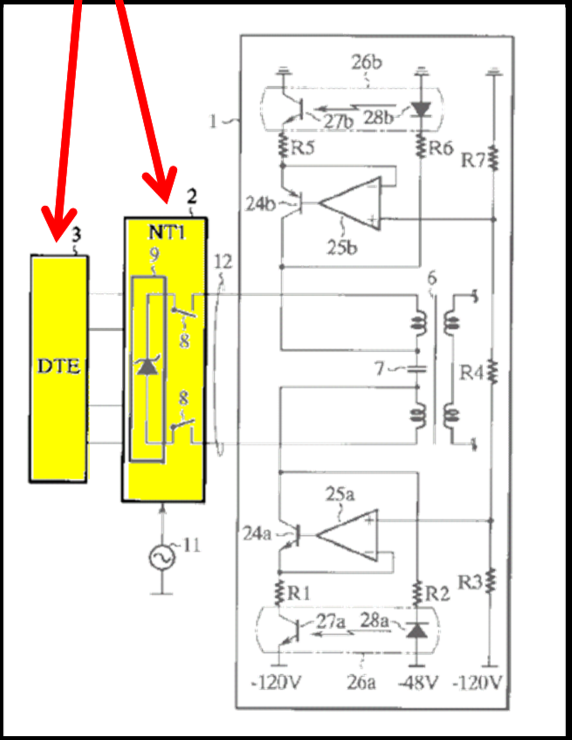
sufficiently low that, by itself, it will not operate the access device.

Matsuno

What you identified as the access device in Matsuno was the DTE or the NT1 or a combination of both; is that right?

A. That is correct.

Zimmerman 28:10-13 (Exh. 2016)



Matsuno Fig. 3 (Exh. 1004)

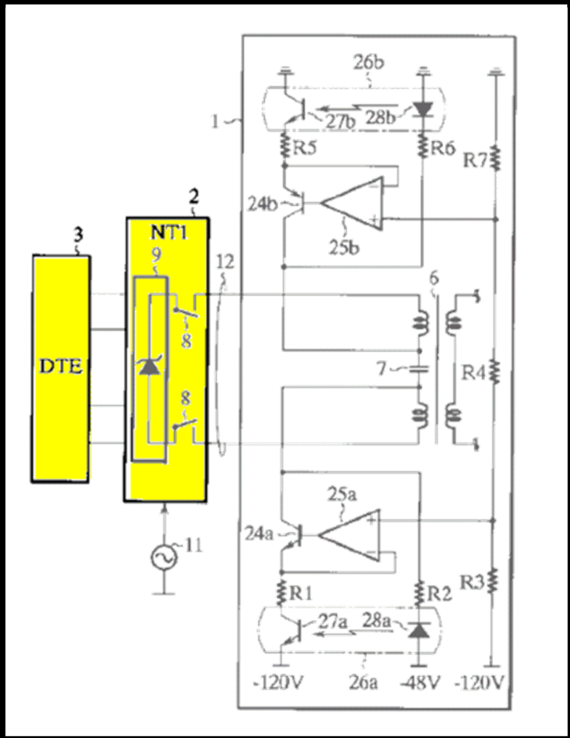
Patent Owner Response at 5 (Paper 42); Avaya Decision at 17 (Paper 18)

"low level current:" sufficiently low that, by itself, it will not operate the access device.

Matsuno

40. Matsuno further describes how, in response to providing a low level current, such as $-V_2$, it detects a resulting voltage or current and, based on that detected voltage or current, it then controls whether to provide a high voltage or a low voltage. See e.g., Matsuno (AV-1004), ¶¶ (0018) – (0020), (0033), (0035), (0036) and (0039). Thus, Matsuno teaches the same general approach to controlling power as claim 6 in the '930 Patent.

Zimmerman ¶40 (Exh. 1011)



Matsuno Fig. 3 (Exh. 1004)

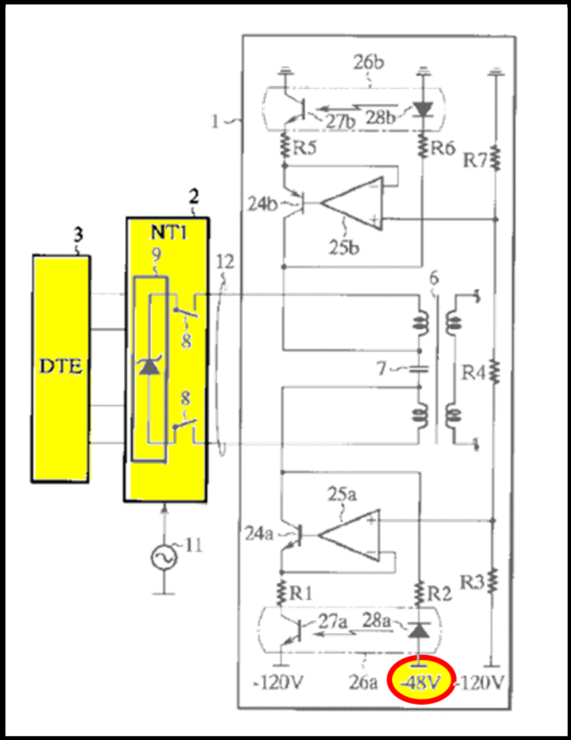
Patent Owner Preliminary Response at 14 (Paper 14) [Dell IPR2013-000385]; Patent Owner Preliminary Response at 18 (Paper 16); Patent Owner Response at 32 (Paper 32):

“low level current:”

sufficiently low that, by itself, it will not operate the access device.

Group, PLC, 479 F.3d 1313, 1319 (Fed. Cir. 2007). To anticipate a claim, a single prior art reference must ~~expressly~~ or ~~inherently~~ disclose each claim limitation.

Finisar Corp. v. DirecTV Group, Inc.,
523 F.3d 1323, 1334 (Fed. Cir. 2008)



Matsuno Fig. 3 (Exh. 1004)

Patent Owner Response at 4 (Paper 42)

“low level current:” sufficiently low that, by itself, it will not operate the access device.

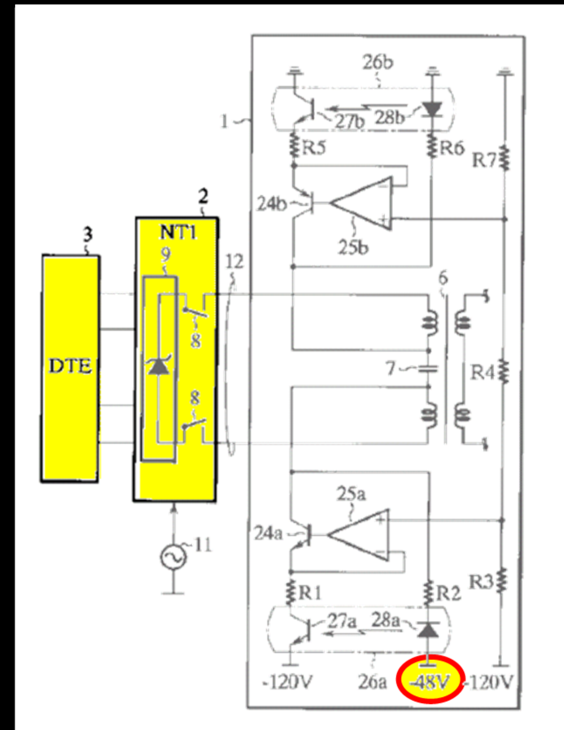
no express disclosure

Q. Does Matsuno disclose that the 48 volts would be insufficient to operate the NT1?
A. He doesn't discuss that at all.

Zimmerman 39:6-8 (Exh. 2016)

Does Matsuno anywhere expressly state that the 48 volts is insufficient to operate a DTE that requires 40 volts?
A. Matsuno does not expressly state that 48 volts delivered at the U interface point would be insufficient.

Zimmerman 36:24-37:3 (Exh. 2016)



Matsuno Fig. 3 (Exh. 1004)

-48 V power source

Patent Owner Response at 6 (Paper 42)

"low level current:"

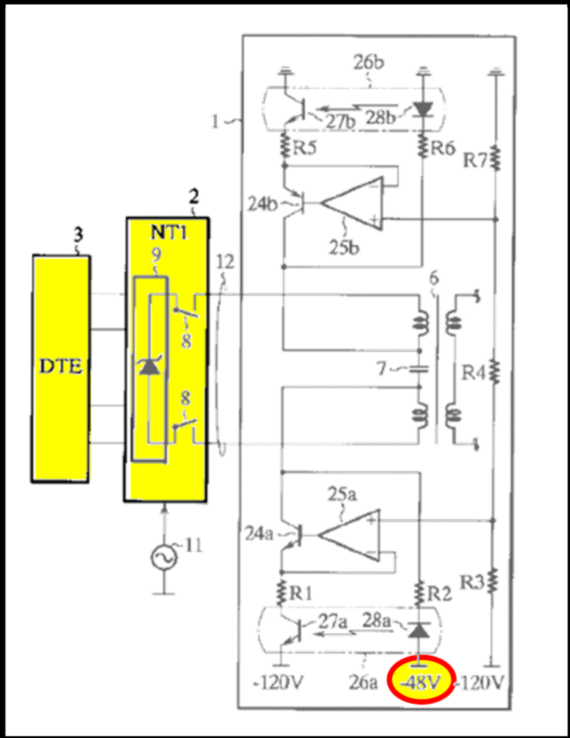
sufficiently low that, by itself, it will not operate the access device.

Group, PLC, 479 F.3d 1313, 1319 (Fed. Cir. 2007). To anticipate a claim, a single prior art reference must ~~expressly~~ or inherently disclose each claim limitation.

Finisar Corp. v. DirecTV Group, Inc.,
523 F.3d 1323, 1334 (Fed. Cir. 2008)

Inherent anticipation requires that the missing characteristic is necessarily present.

Glaxo Group Ltd v. Apotex, Inc.,
376 F.3d 1339, 1348 (Fed. Cir. 2004)



Matsuno Fig. 3 (Exh. 1004)

Patent Owner Response at 4 (Paper 42); Patent Owner Response at 6 (Paper 42)

"low level current:" sufficiently low that, by itself, it will not operate the access device.

no inherent disclosure

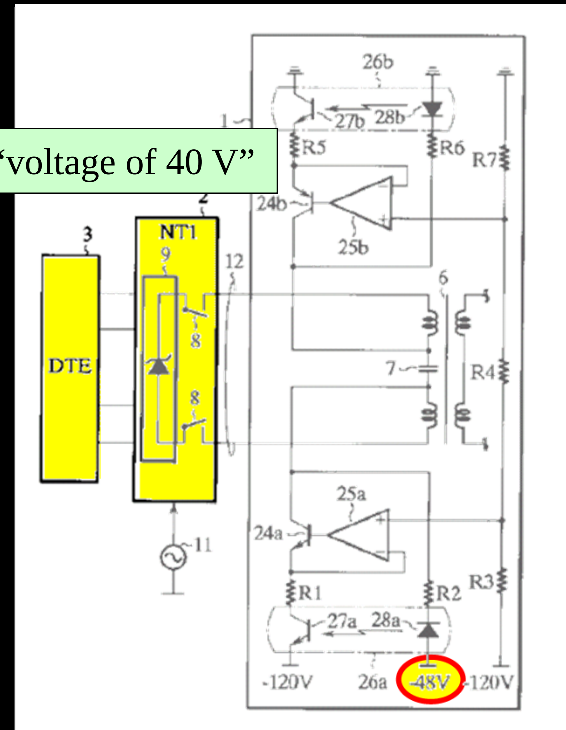
(0004) When the commercial AC power source 111 is functioning normally, for example, an AC current of 100 V is rectified in the phantom power supply part 112 and is converted to a prescribed voltage, for example, a DC voltage of 40 V, for use as the local power supply that is supplied to the subscriber terminal 103. Switching to the aforementioned station power

Matsuno (0004) (Exh. 1004)

needed: "voltage of 40 V"

Q. Is it the case that the only voltage identified
in Matsuno that would be potentially needed by a
subscriber terminal, a DTE, is the 40 volts that's in
Paragraph 4?
A. I believe that is the case.

Zimmerman 32:4-8 (Exh. 2016)



Matsuno Fig. 3 (Exh. 1004)

Patent Owner Response at 8 (Paper 42)

"low level current:" sufficiently low that, by itself, it will not operate the access device.

no inherent disclosure

digital subscriber line 12. The voltage to ground or the line voltage of the digital subscriber line 12 that runs into the home of the subscriber is thus at approximately 48 V, allowing safety to be ensured.

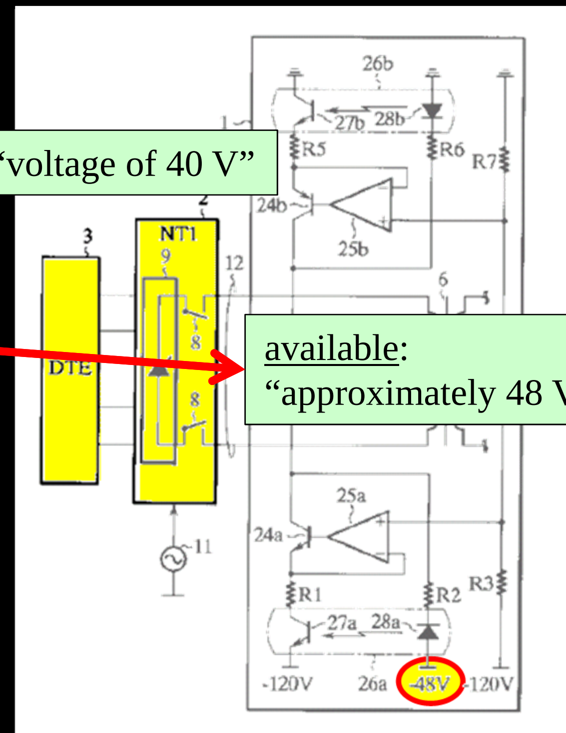
Matsuno (0026) (Exh. 1004)

Is it your understanding that in the Matsuno reference, it discloses that the 48-volt low-level current will provide 48 volts to the subscriber at his home?

A. It says "approximately 48 volts," but yes.

Zimmerman 28:4-8 (Exh. 2016)

needed: "voltage of 40 V"



available: "approximately 48 V"

Matsuno Fig. 3 (Exh. 1004)

Patent Owner Response at 8 -9 (Paper 42)

"low level current:" sufficiently low that, by itself, it will not operate the access device.

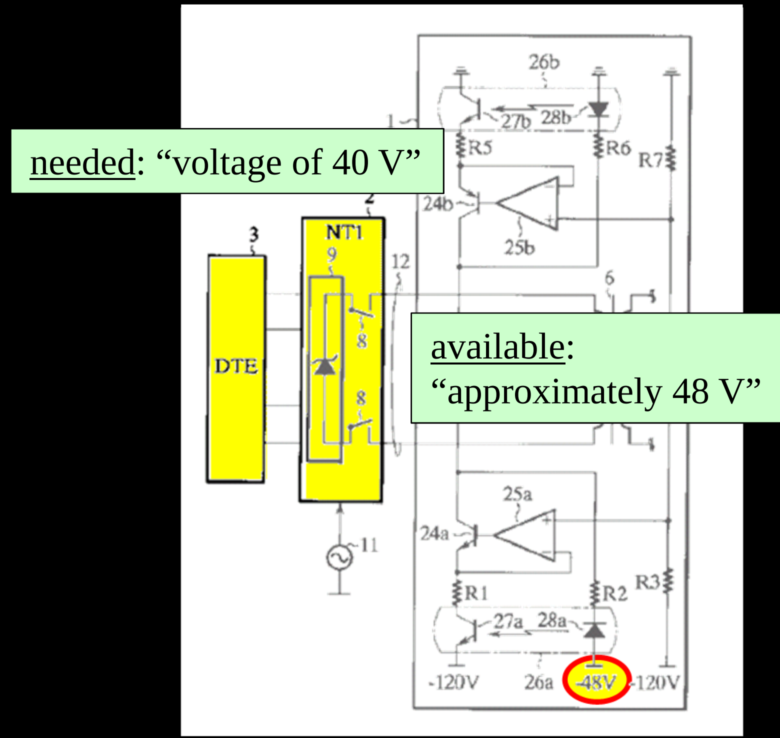
no inherent disclosure

Q. Is it the case that, if we have a relatively short subscriber line, that 48 volts would be sufficient to power a DTE?
A. Not necessarily. And Matsuno doesn't really speak to that at all.

Zimmerman 42:20-24 (Exh. 2016)

Q. Does Mat -- does Matsuno disclose, one way or the other, whether, if we have 48 volts and a relatively short subscriber line, that it would be -- the 48-volt current would be sufficient to operate a DTE?
A. I do not believe it does.

Zimmerman 43:4-8 (Exh. 2016)



Matsuno Fig. 3 (Exh. 1004)

Patent Owner Response at 6-7 (Paper 42)

Petitioners' remaining arguments fail

- ❑ Are approximately 48 volts available?

- ❑ "120 V is the minimum for minimal communications"

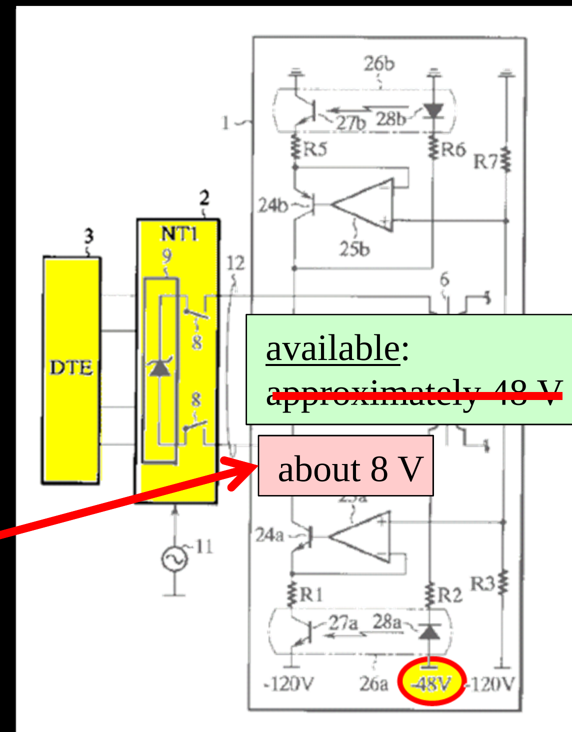
Patent Owner Response at 9 (Paper 42); For the top bullet, see slides 14 – 21;
Knox Decl. ¶120 (N1-2015); for the bottom bullet, see slides 22 – 24.

digital subscriber line 12. The voltage to ground or the line voltage of the digital subscriber line 12 that runs into the home of the subscriber is thus at approximately 48 V, allowing safety to be ensured.

Matsuno (0026) (Exh. 1004)

and [0027]. Factually, only on the order of about 8 V would actually be available to the NT1/DTE —which one skilled in the art knows is well below any voltage level necessary to operate the NT1/DTE, and certainly well below the voltage Dr. Knox assumes would be available. *See* 2nd Zim. Decl. at ¶¶ 32-35. Thus, a skilled artisan understands that the current generated by Matsuno's low voltage V_2 (-48 V) is *insufficient* to operate Matsuno's NT1/DTE. *See* 2nd Zim. Decl. at ¶¶ 32-37.

Avaya's Reply at 5 (Paper 56)

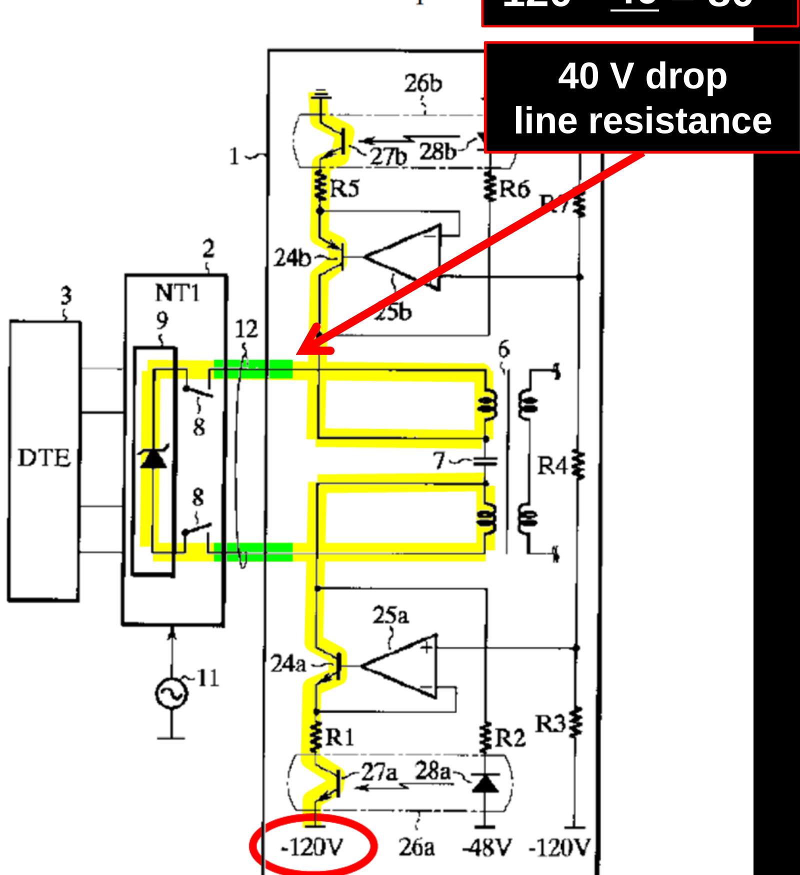


Matsuno Fig. 5 (Exh. 1004)

Patent Owner Response at 8 - 9 (Paper 42); Knox Decl. ¶275 (N1-2024)

(Fig. 3)

Explanatory diagram describing the essential components
first embodiment of the prese



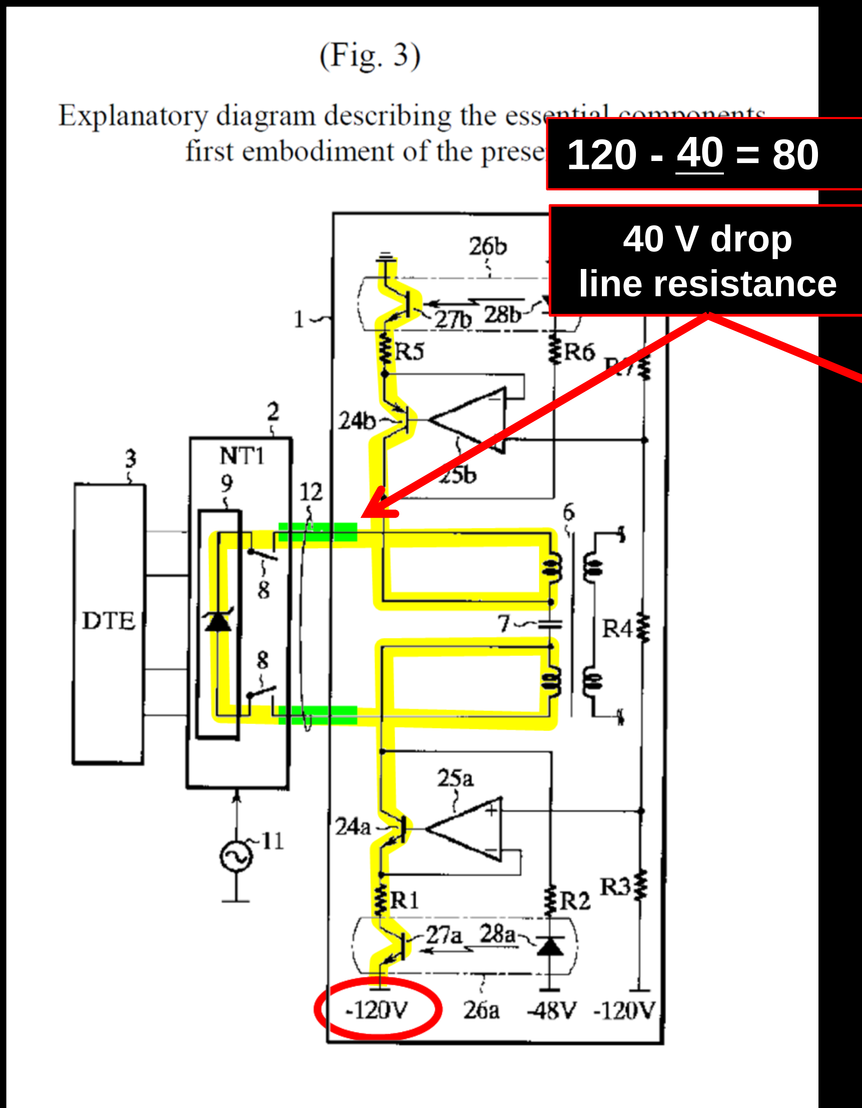
higher voltage (-120V) supply

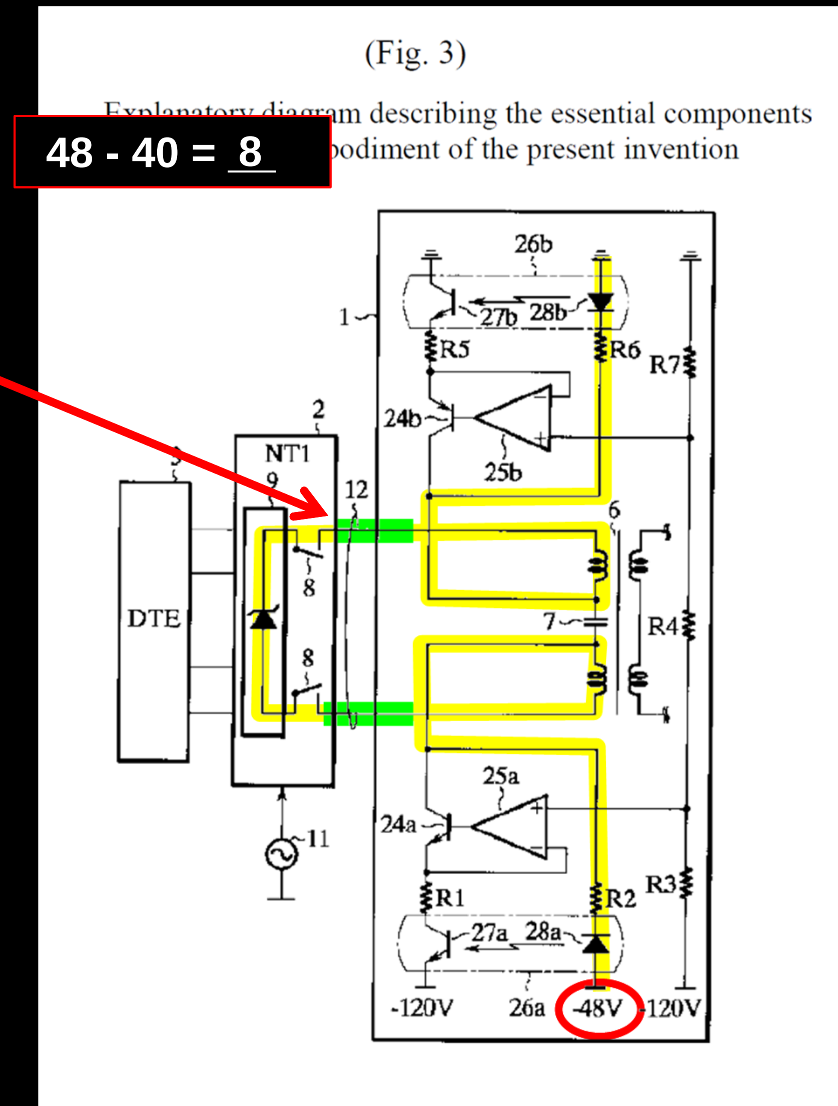
turned ON. Consequently, high voltage V_1 of −120 V is supplied to the digital subscriber line 12, and the current of the station power supply in this case is controlled at a constant current by the constant-current circuit consisting of the transistors 24a, 24b and the operational amplifiers 25a, 25b. In this case, the voltage to ground or the line voltage of the digital subscriber line 12 that runs into the home of the subscriber can be decreased so that it is less than 80 V, including the voltage drop of the digital subscriber line 12 and the voltage drop of the transistors 24a, 24b (constant-current circuit).

Matsuno (0027) (Exh. 1004)

For Figure 3 of Matsuno, see Notes to Slide 16 (citing Knox Decl. ¶276 (N1-2024)); Knox Decl. ¶277 (N1-2024); Knox Decl. ¶275 (N1-2024); Knox Decl. ¶280 (N1-2024)

For left half, see Notes to slide 15 (citing Knox Decl. ¶275 (N1-2024)); Knox Decl. ¶276 (N1-2024): Knox Decl. ¶275 (N1-2024)



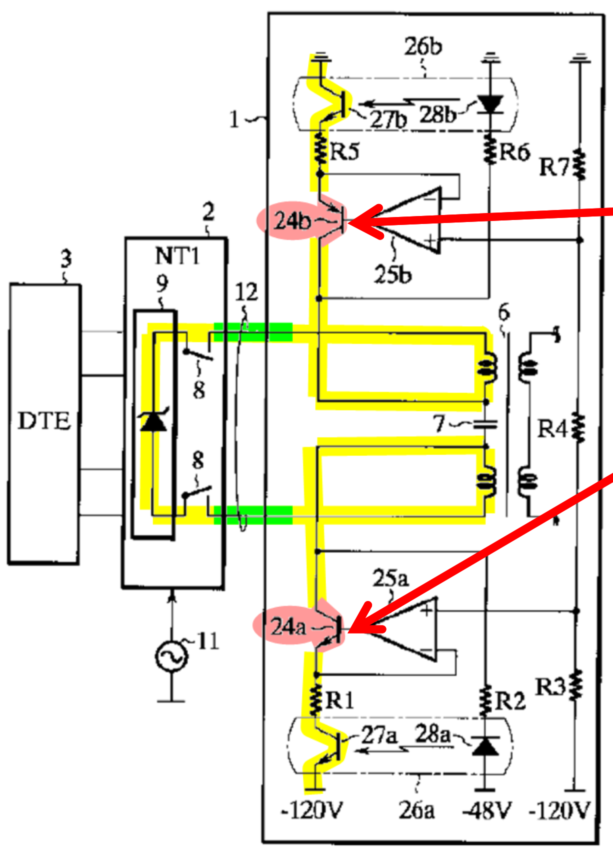


higher voltage (-120V) supply

lower voltage (-48V) supply

(Fig. 3)

Explanatory diagram describing the essential components first embodiment of the present invention



higher voltage (-120V) supply

turned ON. Consequently, high voltage V_1 of −120 V is supplied to the digital subscriber line 12, and the current of the station power supply in this case is controlled at a constant current by the constant-current circuit consisting of the transistors 24a, 24b and the operational amplifiers 25a, 25b. In this case, the voltage to ground or the line voltage of the digital subscriber line 12 that runs into the home of the subscriber can be decreased so that it is less than 80 V, including the voltage drop of the digital subscriber line 12 (1) and the ~~voltage drop of the transistors 24a, 24b (constant-current circuit).~~ (2)

Matsuno (0027) (Exh. 1004)

48 - 40 = 8

Q. That's with the assumption that the 40-volt drop is due entirely to the loop resistance and not to the transistors; right?

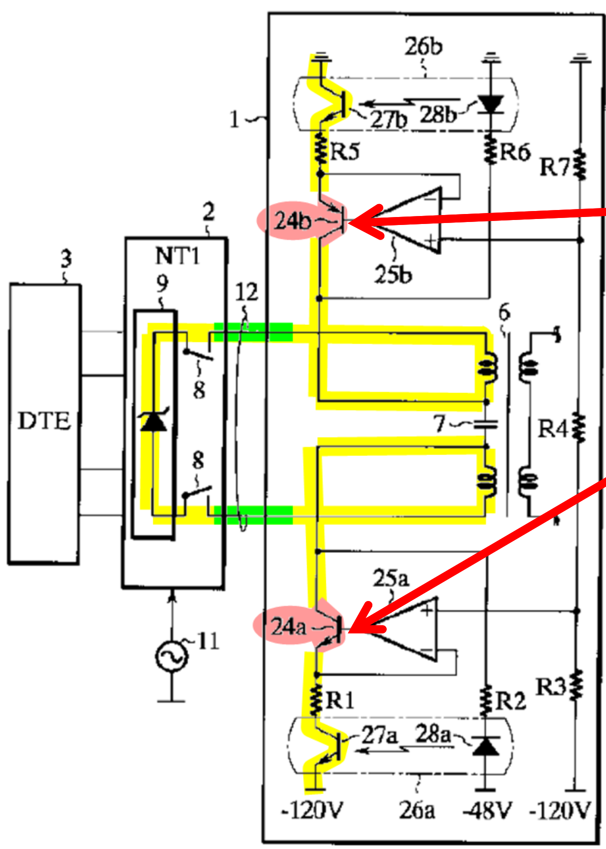
A. That is correct.

Zimmerman 273:16-19 (Exh. 2025)

For Figure 3 of Matsuno, see Notes to Slide 16 (citing Knox Decl. ¶276 (N1-2024)); Knox Decl. ¶277 (N1-2024): Knox Decl. ¶277 (N1-2024)

(Fig. 3)

Explanatory diagram describing the essential components first embodiment of the present invention



higher voltage (-120V) supply

turned ON. Consequently, high voltage V_1 of −120 V is supplied to the digital subscriber line 12, and the current of the station power supply in this case is controlled at a constant current by the constant-current circuit consisting of the transistors 24a, 24b and the operational amplifiers 25a, 25b. In this case, the voltage to ground or the line voltage of the digital subscriber line 12 that runs into the home of the subscriber can be decreased so that it is less than 80 V, including the voltage drop of the digital subscriber line 12 (1) and the voltage drop of the transistors 24a, 24b (constant-current circuit). (2)

Matsuno (0027) (Exh. 1004)

Q. Does Matsuno say that the reason for the
voltage drop from 120 to 80 is because of the voltage (1)
drop of the digital subscriber line 12 and the voltage (2)
drop of the transistors 24a and 24b?
A. That is what it says.
Q. And do you agree that that's what Matsuno
discloses, is the basis for the voltage drop from 120 to
80?
MR. LINDSAY: Objection. Cumulative.
THE WITNESS: I would agree with that.

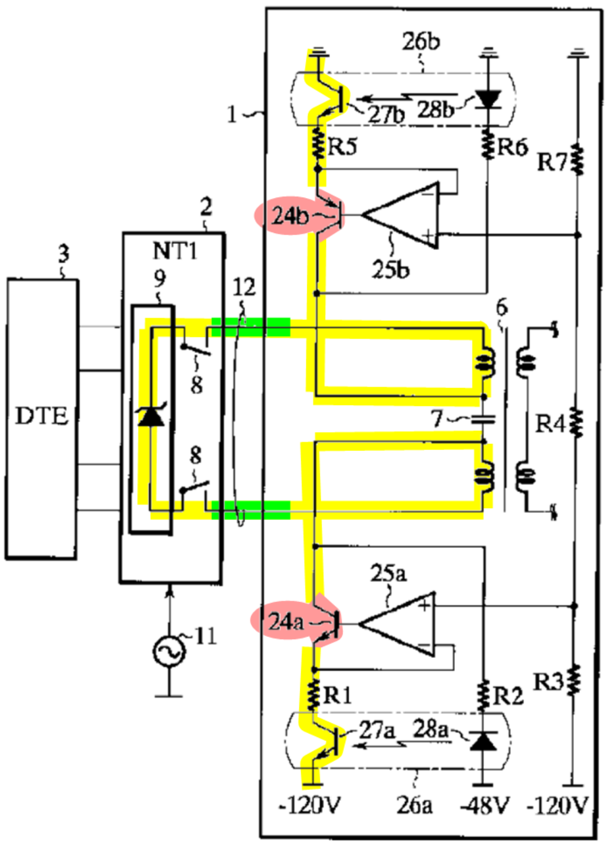
Zimmerman 225:1-10 (Exh. 2025)

For left half, see Notes to Slide 17 (citing Knox Decl. ¶277 (N1-2024)); Knox Decl. ¶277 (N1-2024)

Knox Decl. ¶276 (N1-2024)

(Fig. 3)

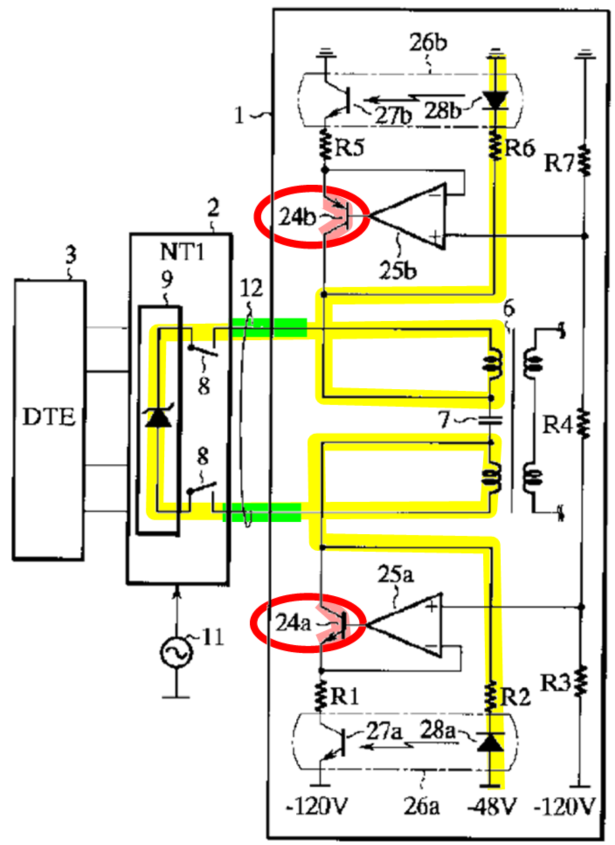
Explanatory diagram describing the essential components
first embodiment of the present invention



higher voltage (-120V) supply

(Fig. 3)

Explanatory diagram describing the essential components
first embodiment of the present invention



lower voltage (-48V) supply

Q. Is it the case that if we're using the 48-volt power supply, then the voltage drop attributable to this circuit that includes 24a and 24b -- that voltage drop would not be present; right?

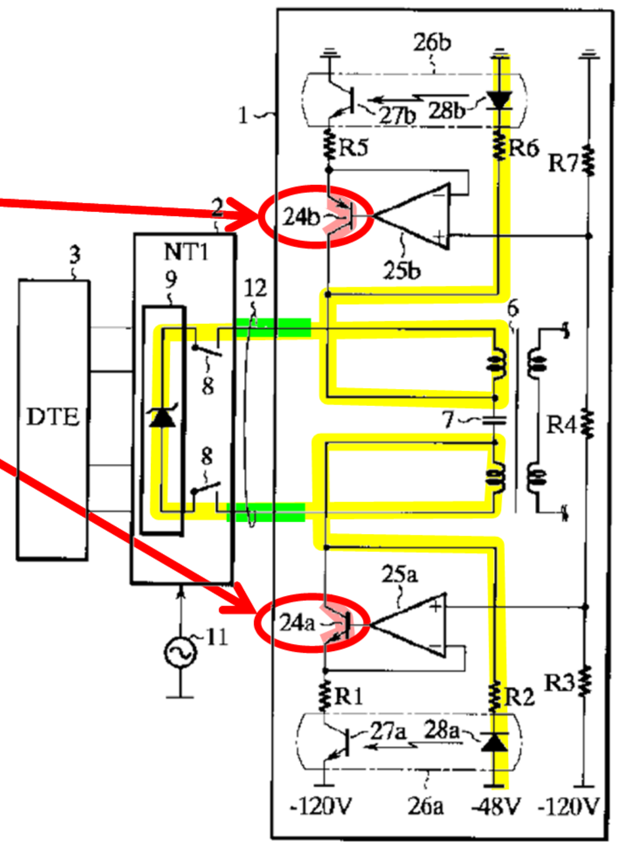
MR. LINDSAY: Objection. Cumulative.

THE WITNESS: That voltage drop would not be present; that is correct.

Zimmerman 243:13-19 (Exh. 2025)

(Fig. 3)

Explanatory diagram describing the essential components first embodiment of the present invention



lower voltage (-48V) supply

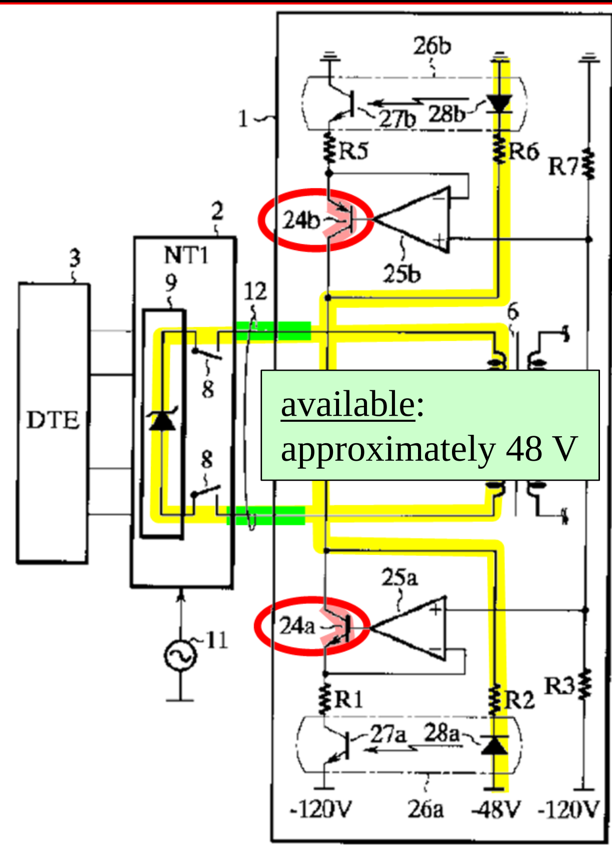
For right half, see Notes to Slide 19 (citing Knox Decl. ¶276 (N1-2024)); Knox Decl. ¶277 (N1-2024) digital subscriber line 12. The voltage to ground or the line voltage of the digital subscriber line 12 that runs into the home of the subscriber is thus at approximately 48 V, allowing safety to be ensured.

Matsuno (0026) (Exh. 1004)

(Fig. 3)

Explanatory diagram describing the essential components

48 - __ = approximately 48 volts



lower voltage (-48V) supply

For Fig. 3, see Notes to Slide 19 (citing Knox Decl. ¶276 (N1-2024)); Patent Owner Response at 8 -9 (Paper 42); Knox Decl. ¶276 (N1-2024)

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certain data signaling pair lengths. As the Board noted, however, if Matsuno's low voltage supply V_2 (-48 V) is supposedly sufficient, by itself, to operate its access device, then presumably there would be no need to switch to the high voltage supply V_1 (-120 V) when local power is unavailable. *See* Dell Decision at 15.

Cite to evidence?

Avaya's Reply at 3 (Paper 56)

118. There are several possible reasons why Matsuno discloses a higher voltage (120 volts) if only 48 volts is needed to operate an NT1 and DTE. For example:

(a) some devices (NT1s or DTEs) may need extra power for certain functionality;

(b) some devices (NT1s or DTEs) operate better or more efficiently at higher voltages; or

(c) higher power would allow NT1s to power additional premises equipment (beyond just a single DTE); or

(d) transmitting power at higher voltages is much more cost effective for the telephone company.

One skilled in the art would understand that the higher power is most likely provided by the system in Matsuno to allow devices to operate at full functionality over very long subscriber loop runs (e.g., up to 10 miles) that have higher line losses, *i.e.*, the houses and installations outside the one mile - 8,500 installation - radius.

Patent Owner Response at 11 (Paper 42);
Patent Owner Response at 7 (Paper 42)

Petitioners: Matsuno says applying 120V is the minimum necessary to operate an access device.

(0004) When the commercial AC power source 111 is functioning normally, for example, an AC current of 100 V is rectified in the phantom power supply part 112 and is converted to a prescribed voltage, for example, a DC voltage of 40 V, for use as the local power supply that is supplied to the subscriber terminal 103. Switching to the aforementioned station power supply occurs with shutdown of the commercial AC power supply, and power sufficient to allow minimal communication on the digital subscriber terminal 103 is thus supplied.

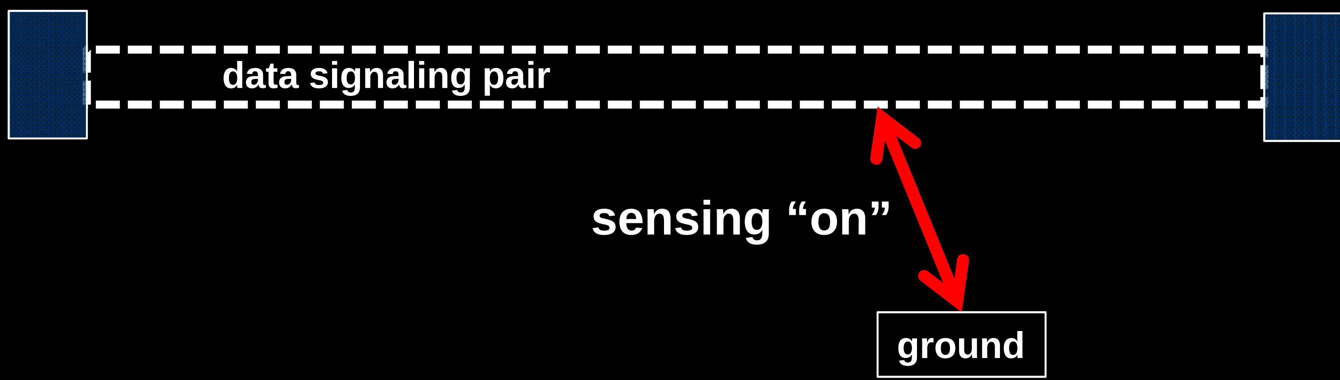
Matsuno (0004) (Exh. 1004)

(0006) During station power supply, the line impedance of the digital subscriber line 104 in the network terminal device 102 becomes small, and the line voltage is sufficiently reduced. However, during local power supply, the line impedance of the digital subscriber line 104 is large, and thus the line voltage is, for example, 85 to 105 V. This type of voltage has been prob-

Matsuno (0006) (Exh. 1004)

Patent Owner Response at 8 (Paper 42); Knox Decl. ¶120 (N1-2015); Knox Decl. ¶278 (N1-2024)

sensing a voltage level on the data signaling pair



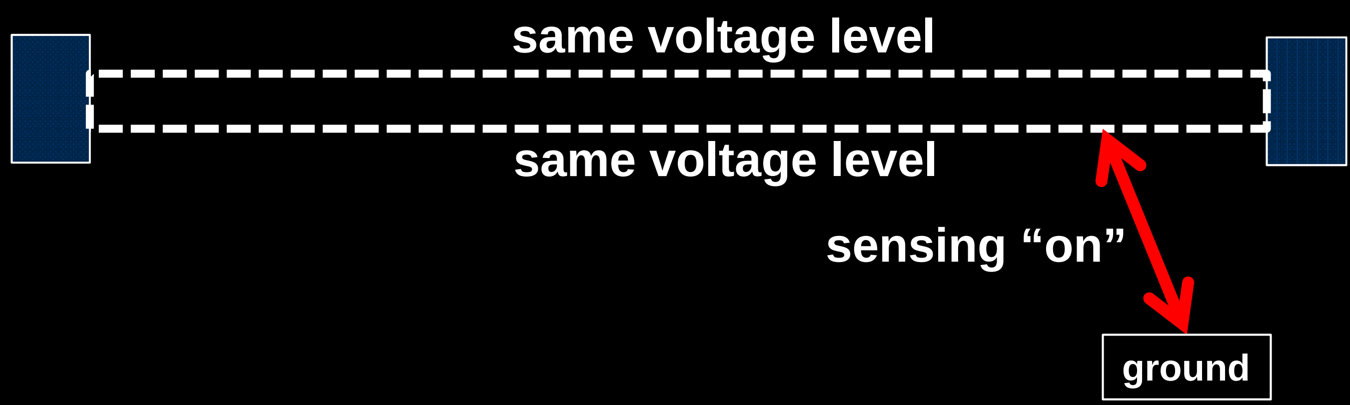
Q. One of ordinary skill in the art would
understand that if somebody referred to "sensing a
voltage level on a wire," that would be sensing the
voltage level with respect to ground; right?
A. Yes.
Q. That's what "on" means?
A. Yes.

Zimmerman 76:11-17 (Exh. 2016)

Patent Owner Response at 16 (Paper 42)

sensing a voltage level on the data signaling pair

voltage level on both wires



Q. If a data signaling pair has the same voltages on each wire, then measure -- we could measure -- we could sense the voltage level on the data signaling pair by measuring the voltage on one of the wires with respect to ground; right?

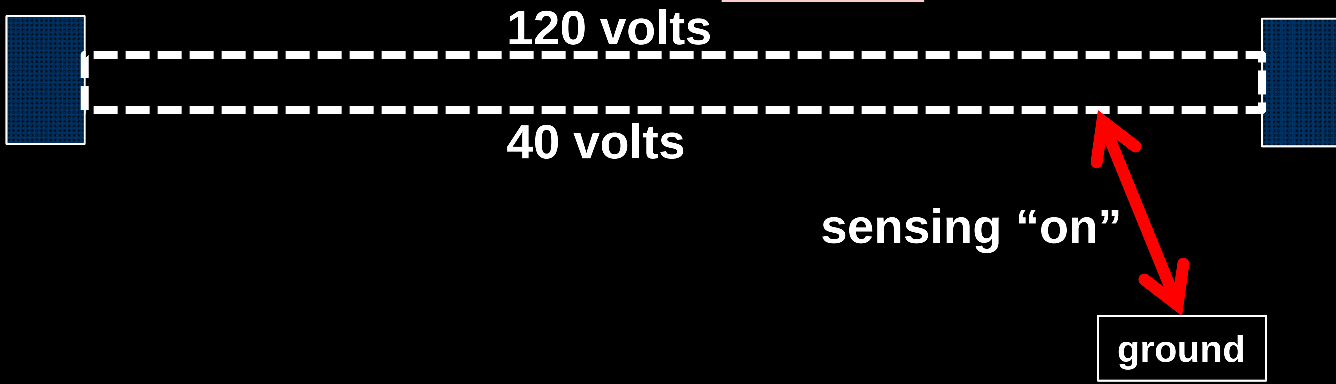
A. Yes. If they had the same voltage on each of them, then the two individual measurements become one.

Zimmerman 77:9-15 (Exh. 2016)

Patent Owner Response at 25 (Paper 42)

sensing a voltage level on ~~the data signaling pair~~

one wire



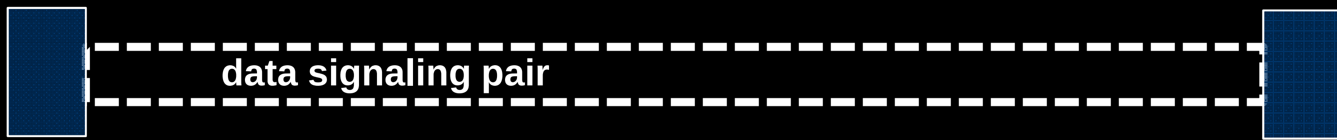
Q. It would tell you a voltage on one wire of a
data signaling pair; right?
A. That is correct.
Q. It wouldn't tell you the voltage on the data
signaling pair; right?
A. That is correct.

Zimmerman 60:4-9 (Exh. 2016)

Patent Owner Response at 26 (Paper 42); Patent Owner Response at 25 (Paper 42)

sensing a voltage level on ~~the data signaling pair~~

one wire

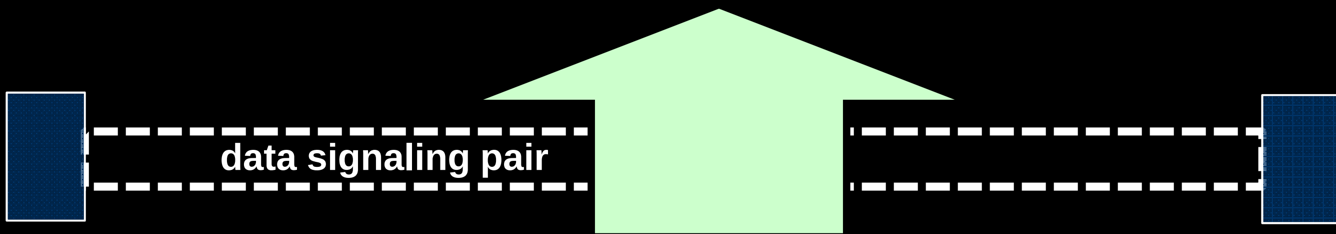


> Although the PTO emphasizes that it was required to give all 'claims their broadest reasonable construction' . . ., this court has instructed that any such construction be 'consistent with the specification, . . . and that claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.' In re Bond, 910 F.2d 831, 833 (Fed. Cir. 1990) (quoting In re Sneed, 710 F.2d 1544, 1548 (Fed. Cir. 1983)) (emphasis added). The PTO's construction here, though certainly broad, is unreasonably broad. The broadest-construction rubric coupled with the term 'comprising' does not give the PTO an unfettered license to interpret claims to embrace anything remotely related to the claimed invention. Rather, claims should always be read in light of the specification and teachings in the underlying patent.

***In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260-61 (Fed. Cir. 2010)**

Patent Owner Response at 17 (Paper 42); Patent Owner Preliminary Response 20 (Paper 16)

sensing a voltage level on the data signaling pair



Q. Now, if we take that reasonable interpretation, one of ordinary skill in the art would understand that the '930 patent teaches sensing a voltage level on a data signaling pair by sensing the voltage on a lead that connects to a center tap and gives us the voltage level on both wires of that pair; right?

MR. SANOK: Objection. Foundation.

THE WITNESS: It gives us a voltage level from both wires of the pair, yes.

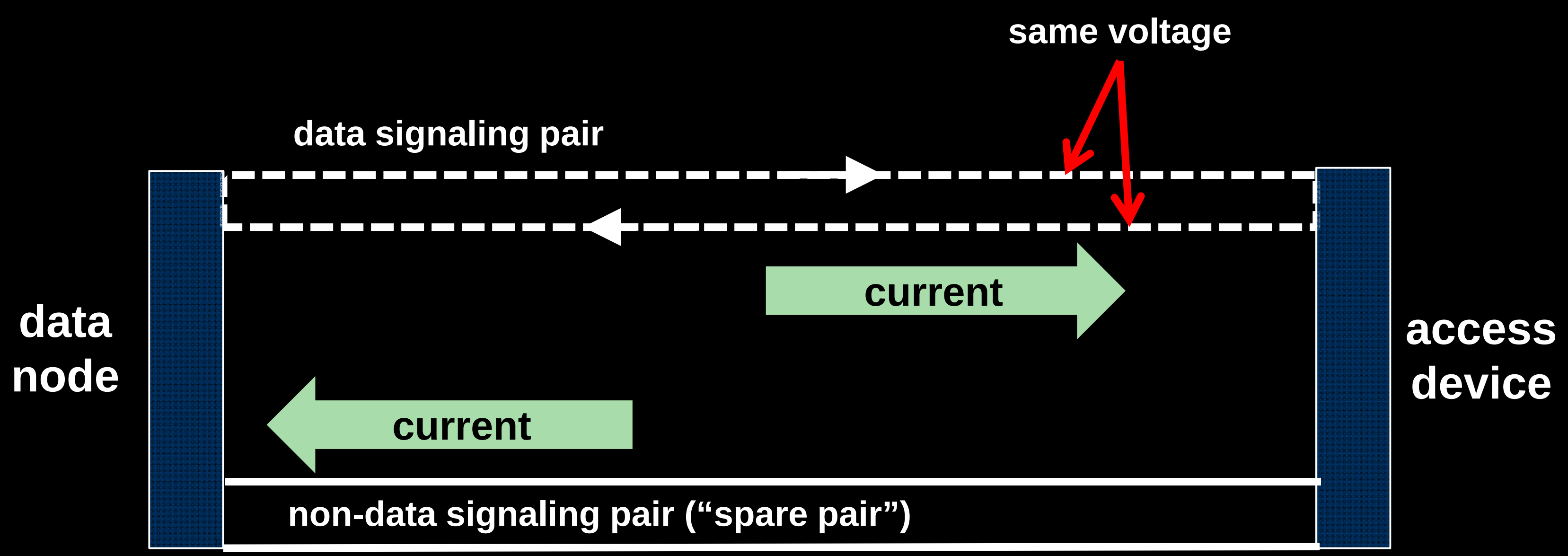
Zimmerman 142:15-23 (Exh. 2016)

Although the PTO emphasizes that it was required to give all 'claims their broadest reasonable construction' . . ., this court has instructed that any such construction be 'consistent with the specification, . . . and that claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.' In re Bond, 910 F.2d 831, 833 (Fed. Cir. 1990) (quoting In re Sneed, 710 F.2d 1544, 1548 (Fed. Cir. 1983)) (emphasis added). The PTO's construction here, though certainly broad, is unreasonably broad. The broadest-construction rubric coupled with the term 'comprising' does not give the PTO an unfettered license to interpret claims to embrace anything remotely related to the claimed invention. Rather, claims should always be read in light of the specification and teachings in the underlying patent.

***In re Suitco Surface, Inc.*, 603 F.3d 1255, 1260-61 (Fed. Cir. 2010)**

See slide 28 for bottom half; Patent Owner Response at 25 (Paper 42) their own lexicographers. Second, Claim 6 recites a *single* data signaling pair (i.e., two wires), yet there is no teaching as to how one of ordinary skill in the art could implement a common mode voltage using only a single data signaling pair.

Avaya Reply (Paper 56) at 6



for the current. This is because the return path for the voltage / current can be something other than a data signaling pair. In a simple example, the return can be what is known as a "spare pair" – that is, a pair of wires that is used to transmit a current but is not used to transmit data.[5] Alternatively, the return path could

Knox Decl. ¶57 (Exh. 2015)

Knox Decl. ¶57 (N1-2015)

sensing a voltage level on the data signaling pair

the claim language "on the data signaling pair" does not appear in Zimmerman's Declaration.

40. Matsuno further describes how, in response to providing a low level current, such as $-V_2$, it detects a resulting voltage or current and, based on that detected voltage or current, it then controls whether to provide a high voltage or a low voltage. See e.g., Matsuno (AV-1004), ¶¶ (0018) – (0020), (0033), (0035), (0036) and (0039). Thus, Matsuno teaches the same general approach to controlling power as claim 6 in the '930 Patent.

Zimmerman ¶40 (Exh. 1011)

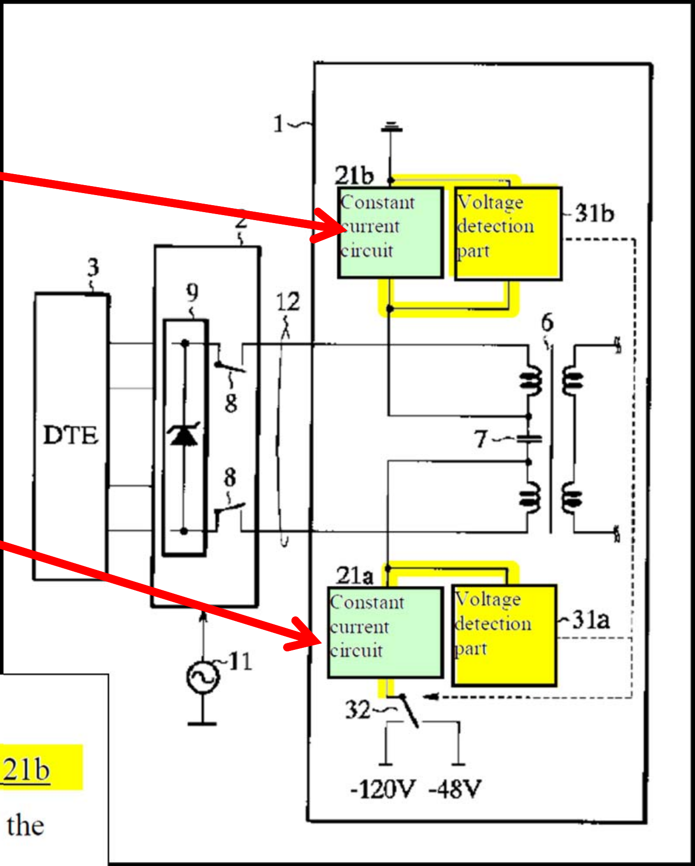
Patent Owner Response at 31-32 (Paper 42)

sensing a voltage level on the data signaling pair

Matsuno

senses the voltage across the constant current circuit 21b

senses the voltage across the constant current circuit 21a



Matsuno Fig. 5 (Exh. 1004)

133. This passage, referring to Figure 5 of Matsuno, describes an embodiment in which a voltage is detected across the constant-circuits 21a and 21b (that is, the difference in voltage from one end of the constant-current circuit to the other end),[11] not the voltage on the digital subscriber line 12 as required by the claim language. Dr. Zimmerman agrees with my understanding that Figure 10 also

Knox Decl. ¶133 (Exh. 1015)

Patent Owner Response at 30 (Paper 42); Knox Decl. ¶133 (N1-1015)

sensing a voltage level on ~~the data signaling pair~~

one wire

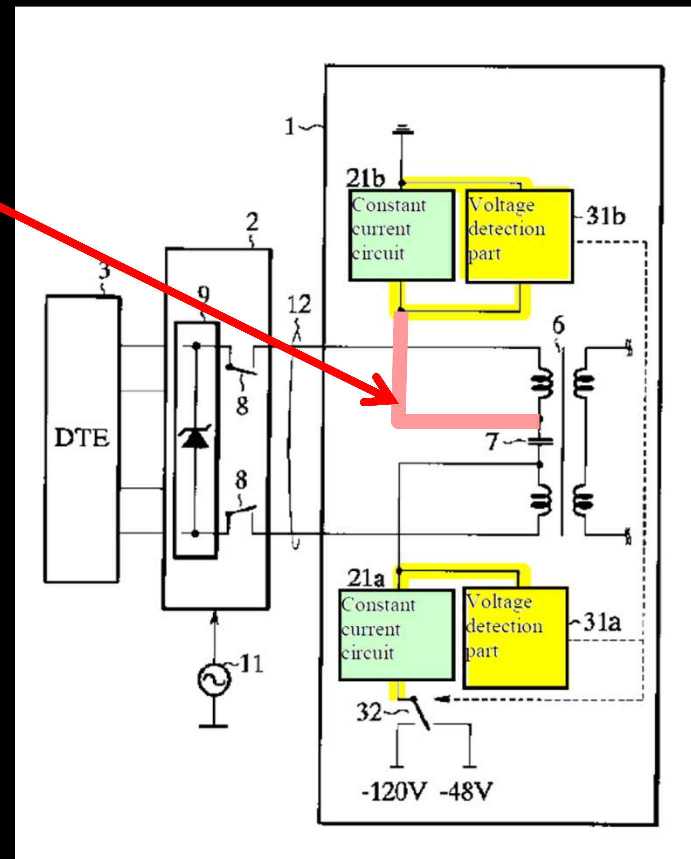
Matsuno

Q. If one were to attach a lead to one wire of the data signaling pair in Matsuno and then measure the voltage on that wire with respect to some reference, that would not tell you the voltage on the data signaling pair; right?
A. No, it would not. That is correct.

Zimmerman 60:17-22 (Exh. 2016)

Q. It would tell you a voltage on one wire of a data signaling pair; right?
A. That is correct.
Q. It wouldn't tell you the voltage on the data signaling pair; right?
A. That is correct.

Zimmerman 60:4-9 (Exh. 2016)



Matsuno Fig. 5 (Exh. 1004)

Patent Owner Response at 24 (Paper 42)

9. Method according to claim **6**, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

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2
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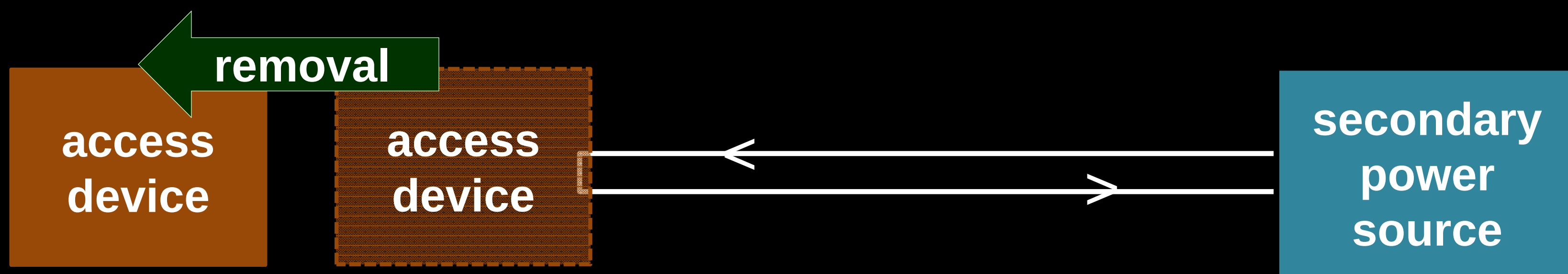


Patent Owner Response at 33 (Paper 42); Patent Owner Response at 33-34 (Paper 42)

Avaya Petition at 26 (Paper 1)

9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

“The difference detection part 52 determines the difference between the voltage detection values of the first and second voltage detection parts the difference exceeds a first set value, the contact breaker point 53 is controlled so that the supplied voltage is a low voltage V2 of −48 V. When the difference in the voltage detection values is greater than a second set value, the contact breaker point 54 is controlled so that it is turned OFF and station power supply is halted.” *Id*. at page 7, ¶ (0053).

Fig. 10: eighth embodiment

“When local power supply is restarted, as described above, the contact breaker point 8 is turned OFF, and current does not flow into the digi so the line voltage of the TIP line and RING line becomes approximately 120V. Because re-initiation of local power supply can be detected by detection of this increase voltage by the voltage detection part 34, the contact breaker point 32 is controlled and switched to the low voltage V2 of -48V, and is switched to the voltage detection standard value during low voltage power supply.” Ex. AV-1004, page 6, ¶ (0040).

Fig. 6: fourth embodiment

28. I have reviewed the claim chart included in the Petition which cites to certain portions of Matsuno that correspond to the various elements of claims 6 and 9 of the ’930 Patent. It is my opinion that this claim chart, in view of the general knowledge in the art at the time, shows that each and every one of the elements of claims 6 and 9 are fully disclosed in Matsuno.

Zimmerman Decl. ¶28 (Exh. 1011)

Patent Owner Response at 37-38 (Paper 42); Knox Decl. ¶146 (N1-2015)

Avaya Petition at 26 (Paper 1)

9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

"The difference detection part 52 determines the difference be
detection values of the first and second voltage detection parts
the difference exceeds a first set value, the contact breaker po
that the supplied voltage is a low voltage V2 of −48 V. When the difference in the voltage detection values is greater than a second set value, the contact breaker point 54 is controlled so that it is turned OFF and station power supply is halted." *Id*. at page 7, ¶ (0053).

Fig. 10: eighth embodiment

"When local power supply is restarted, as described above, t
point 8 is turned OFF, and current does not flow into the digi
so the line voltage of the TIP line and RING line becomes approximately 120V. Because re-initiation of local power supply can be detected by detection of this increase voltage by the voltage detection part 34, the contact breaker point 32 is controlled and switched to the low voltage V2 of -48V, and is switched to the voltage detection standard value during low voltage power supply." Ex. AV-1004, page 6, ¶ (0040).

Fig. 6: fourth embodiment

Dr. Zimmerman, however, testifies that the voltage would *decrease*:

> If the "network terminal device (NT1)2" in Matsuno were disconnected or otherwise removed, the circuit would be open and no current would flow. *The voltage would correspondingly drop to zero.* The disconnection or removal of the terminal device would be understood to result in the voltage decreasing to zero, which would indicate the removal of equipment, as recited in claim 9 of the '930 Patent.

Ex. 1011 ¶ 42 (emphasis added). On this record, and in the absence of evidence to the contrary beyond Network-1's attorney argument, Dr. Zimmerman's testimony is persuasive. We also note that Network-1's

Dell Decision at 17-18 (Paper 16)

Dell Decision at 17-18 (Paper 16); Patent Owner Response at 37-38 (Paper 42):

Avaya Petition at 26 (Paper 1)

9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

"The difference detection part 52 determines the difference between the voltage detection values of the first and second voltage detection parts the difference exceeds a first set value, the contact breaker point 53 is controlled so that the supplied voltage is a low voltage V2 of −48 V. When the difference in the voltage detection values is greater than a second set value, the contact breaker point 54 is controlled so that it is turned OFF
Id. at page 7, ¶ (0053).

"When local power supply is restarted, as described above, the contract breaker point 8 is turned OFF, and current does not flow into the digital subscriber line 12, so the line voltage of the TIP line and RING line becomes approximately 120V. Because re-initiation of local power supply can be detected by detection of this increase voltage by the voltage detection part 34, the contact breaker point 32 is controlled and switched to the low voltage V2 of -48V, and is switched to the voltage detection standard value during low voltage power supply." Ex. AV-1004, page 6, ¶ (0040).

Fig. 10: eighth embodiment

voltage level increases, not drops

Patent Owner Response at 41 (Paper 42)

Avaya Petition at 26 (Paper 1)

9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

"The difference detection part 52 determines the difference between the voltage detection values of the first and second voltage detection parts the difference exceeds a first set value, the contact breaker point 53 is controlled so that the supplied voltage is a low voltage V2 of −48 V. When the difference in the voltage detection values is greater than a second set value, the contact breaker point 54 is controlled so that it is turned OFF and station power supply is halted." *Id*. at page 7, ¶ (0053).

Fig. 10: eighth embodiment

"When local power supply is restarted, as described above, the contract breaker point 8 is turned OFF, so the line voltage of t Because re-initiation c increase voltage by th controlled and switche voltage detection stan page 6, ¶ (0040).

Q. You haven't reached a conclusion one way or the other yet?

A. For the record, I'm looking at Claim 9 of the '930 patent.
Maybe. I didn't look at -- I did not look at Matsuno for what it didn't say.
It's implying here that the actual things that are sensed are the voltages. In the case of -- in the case of 51a, it's voltage relative to a -- relative to a constant voltage source; and it does not expressly discuss physical removal of the device, but does discuss removal of the device from -- from power. But it's a little bit of a stretch.
There's a reason I didn't use -- didn't use 53 in my -- in my Declaration. It's more directed towards -- towards fault conditions.

Zimmerman 179:17-180:7 (Exh. 2016)

Patent Owner Response at 37-38 (Paper 42)

Avaya Petition at 26 (Paper 1)

9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

"The difference detection part 52 determines the difference between the voltage detection values of the first and second voltage detection parts 51a, 51b, and, when the difference exceeds a first set value, the contact breaker point 53 is controlled so that the supplied voltage is a low voltage V2 of −48 V. When the difference in the voltage detection values is greater than a second set value, the contact breaker point 54 is controlled so that it is turned OFF and station power supply is halted." *Id.* at page 7, ¶ (0053).

"When local power supply is restarted, as described above, the contact breaker point 8 is turned OFF, and current does not flow into the digi… so the line voltage of the TIP line and RING line becomes approximately 120V. Because re-initiation of local power supply can be detected by detection of this increase voltage by the voltage detection part 34… controlled and switched to the low voltage V2 c… voltage detection standard value during low voltage power supply." Ex. AV-1004, page 6, ¶ (0040…

Fig. 6: fourth embodiment

voltage level increases, not drops

Q. In Figure 6, if we're supplying power from the
secondary power source and the NT1 is removed, what
happens to the voltage level that's measured by voltage
detection part 34?
A. If we're supplying power from the secondary
power source and the NT1 is removed, the voltage at
voltage detection part 34 would increase.
Q. Does the fourth embodiment in Figure 6 teach
something that is the opposite of what Claim 9 requires?
MR. SANOK: Objection. Foundation.
THE WITNESS: Well, if I'm right, in the
offhand circuit analysis I did, it may.

Zimmerman 114:21-115:7 (Exh. 2016)

Patent Owner Response at 41-42 (Paper 42)

Avaya Petition at 26 (Paper 1)

9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

"The difference detection part 52 determines the difference between the voltage detection values of the first and second voltage detection parts ... the difference exceeds a first set value, the contact breaker point 55 is controlled so that the supplied voltage is a low voltage V2 of −48 V. When the difference in the voltage detection values is greater than a second set value, the contact breaker point 54 is controlled so that it is turned OFF and station power supply is halted." *Id.* at page 7, ¶ (0053).

"When local power supply is restarted, as described above, the contact breaker point 8 is turned OFF, and current does not flow into the digi... so the line voltage of the TIP line and RING line becomes approximately 120V. Because re-initiation of local power supply can be detected by detection of this increase voltage by the voltage detection part 34, the contact breaker point 32 is controlled and switched to the low voltage V2 of -48V, and is switched to the voltage detection standard value during low voltage power supply." Ex. AV-1004, page 6, ¶ (0040).

Fig. 10: eighth embodiment

Fig. 6: fourth embodiment

Avaya Reply: Fig. 5: third embodiment

In the description of Figure 5 in Matsuno, does it teach a situation where we have a drop in the sensed voltage that then is used to trigger a reduction in the secondary power?

A. No, it does not.

Zimmerman Depo. 164:11-15 (Exh. 2016)

See slides 35 – 39 for top half; Patent Owner Response at 43-44 (Paper 42)

9. Method according to claim **6**, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

1

Q. As you understand Claim 9, for a prior-art reference to anticipate, it's going to have to have this Claim 9 situation occur while the secondary power is being applied; right?

A. Yes.

Q. In particular, removal of the access device would have to take place while secondary power is being applied; right?

A. Yes, it would.

Zimmerman 154:9-17 (Exh. 2016)

Patent Owner Response at 35 (Paper 42)

9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

1

Does Matsuno teach a circumstance where, when power is being supplied from the secondary power source, 120 volts, then that is followed by removal of an access device?
MR. SANOK: Objection. Form.
THE WITNESS: I don't believe I saw that in Matsuno. One of ordinary skill would be able to look at these circuits, similar to the way we've done, and understand how that would work.

Zimmerman 117:8-16 (Exh. 2016)

Q. Okay. But you would agree, sir, that it's not necessary – not necessarily the case that the only time access devices are removed is when they are undergoing secondary power; right?
A. Yes.

Zimmerman 156:4-8 (Exh. 2016)

Patent Owner Response at 33-34 (Paper 42); Patent Owner Response at 35- 36 (Paper 42)

9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

3

or amount of such decrease. Since claim 9 suggests that there is no longer an access device to power and, in any event, does not further limit the degree of the voltage decrease, one skilled in the art would read the claim as including a decrease to zero.

Zimmerman Decl. ¶41 (Exh. 1011)

Patent Owner Response at 39 (Paper 42); See Slide 34 for removal

9. Method according to claim **6**, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

3

Q. Does Matsuno, either inherently or expressly, disclose the physical removal of the access device while secondary power is being provided?

A. No, it does not.

Zimmerman 121:7-10 (Exh. 2016)

Patent Owner Response at 35 (Paper 42); See Slide 34 for removal

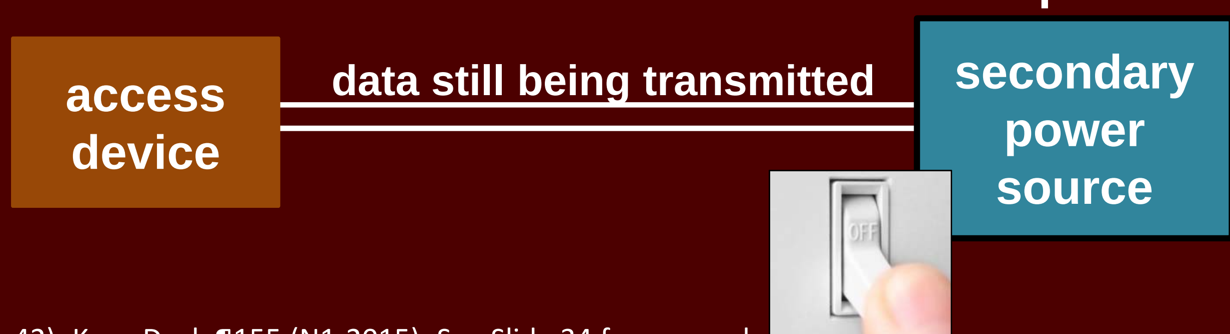
9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

3

9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of ~~the access device~~.

secondary power

turn off remote power



Patent Owner Response at 39 (Paper 42); Knox Decl. ¶155 (N1-2015); See Slide 34 for removal

Elements Missing from Matsuno

6. Method for remotely powering access equipment in a data network, comprising,

providing a data node adapted for data switching, an access device adapted for data transmission, at least one data signaling pair connected between the data node and the access device and arranged to transmit data therebetween, a main power source connected to supply power to the data node, and a secondary power source arranged to supply power from the data node via said data signaling pair to the access device,

delivering a low level current from said main power source to the access device over said data signaling pair,

sensing a voltage level on the data signaling pair in response to the low level current, and

controlling power supplied by said secondary power source to said access device in response to a preselected condition of said voltage level.

9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

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Petitioners
(have the burden of proof)

Q. Does Matsuno disclose that the 48 volts would be insufficient to operate the NT1?
A. He doesn't discuss that at all.

Zimmerman 39:6-8 (Exh. 2016)

Q. It wouldn't tell you the voltage on the data signaling pair; right?
A. That is correct.

Zimmerman 60:4-9 (Exh. 2016)

I don't believe I saw that in Matsuno.

Zimmerman 117:8-16 (Exh. 2016)

See Slides [8], [33], and [42] above; Patent Owner Response, Table of Contents (Paper 42):

missing elements

Petitioners Argument:

combine elements from Matsuno and De Nicolo

Petition at Table of Contents (Paper 1)

Petition, at Table of Contents (Paper 1)

missing elements

De Nicolo

6. Method for remotely powering access equipment in a data network, comprising,

providing a data node adapted for data switching, an access device adapted for data transmission, at least one data signaling pair connected between the data node and the access device and arranged to transmit data therebetween, a main power source connected to supply power to the data node, and a secondary power source arranged to supply power from the data node via said data signaling pair to the access device,

delivering a low level current from said main power source to the access device over said data signaling pair,

sensing a voltage level on the data signaling pair in response to the low level current, and

controlling power supplied by said secondary power source to said access device in response to a preselected condition of said voltage level.

9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

Q. Does De Nicolo disclose the steps of providing
a low-level current, sensing a voltage on the data
signaling pair, and then controlling power in response to
that?
A. No. Those were the elements I combined with
Matsuno for.

Zimmerman 189:18-23 (N1-2016)

Patent Owner Response at 48 (Paper 42)

missing elements

Matsuno	De Nicolo
6. Method for remotely powering access equipment in a data network, comprising, providing a data node adapted for data switching, an access device adapted for data transmission, at least one data signaling pair connected between the data node and the access device and arranged to transmit data therebetween, a main power source connected to supply power to the data node, and a secondary power source arranged to supply power from the data node via said data signaling pair to the access device, delivering a low level current from said main power source to the access device over said data signaling pair, sensing a voltage level on the data signaling pair in response to the low level current, and controlling power supplied by said secondary power source to said access device in response to a preselected condition of said voltage level.	6. Method for remotely powering access equipment in a data network, comprising, providing a data node adapted for data switching, an access device adapted for data transmission, at least one data signaling pair connected between the data node and the access device and arranged to transmit data therebetween, a main power source connected to supply power to the data node, and a secondary power source arranged to supply power from the data node via said data signaling pair to the access device, delivering a low level current from said main power source to the access device over said data signaling pair, sensing a voltage level on the data signaling pair in response to the low level current, and controlling power supplied by said secondary power source to said access device in response to a preselected condition of said voltage level.
9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.	9. Method according to claim 6, including the step of continuing to sense voltage level and to decrease power from the secondary power source if voltage level drops on the data signaling pair, indicating removal of the access device.

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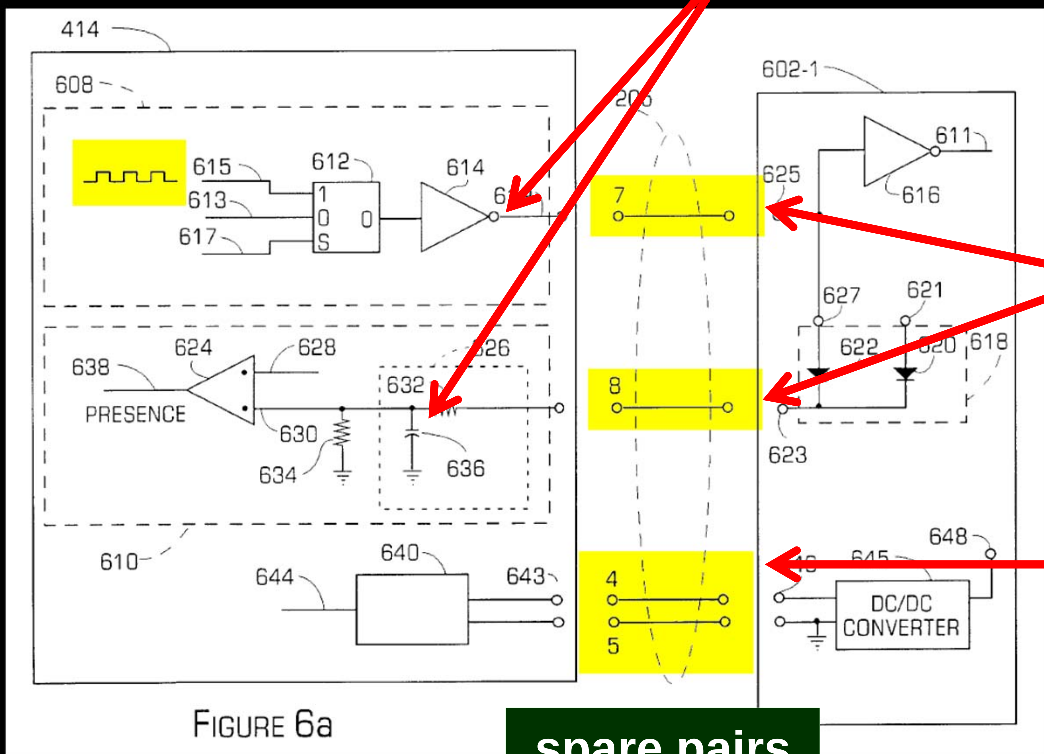
See Slide 48 for right half; See Slide 46 for left half

Chang reference:

- ❑ use a data signal (not a low level current) for detection



spare pairs

use spare pair (not data signaling pair) for detection

use spare pair (not data signaling pair) for delivering powering current

Chang Fig. 6a (Exh. 1006)

Patent Owner Response at 50 (Paper 42); Patent Owner Reply at 5 (Paper 65); Patent Owner Preliminary Response at 42 (Paper 16)

Initial skepticism followed by industry recognition

<u>Licenses</u>:

Cisco
Linksys
3Com Corp.
Enterasys
Extreme
Adtran

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

AMENDMENT NO. 1
TO
FORM S-1

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

NETWORK-1 SECURITY SOLUTIONS, INC.

Settlement of Litigation Against Major Data Networking Equipment Manufacturers including lic
our Remote Power Patent

In July 2010, we settled our litigation with Adtran, Inc, Cisco Systems, Inc. and Cisco-Linksys, LLC, (collectively, "Cisco"), Enterasys Networks, Inc., Extreme Networks, Inc., Foundry Networks, Inc., and 3Com Corporation, Inc. pending in the United States District C
Cisco, Enterasys, Extreme Net
into non-exclusive licenses for
Licensed Defendants paid us aggregate upfront payments of approximately $32 million and also agreed to license the Remote Power Patent for its full term, which expires in March 2020. In accordance with our Settlement and License Agreement, dated May 25, 20
(which began in the first quart
$8 million through 2015 and $
subject to certain conditions including the continued validity of our Remote Power Patent, and the actual royalty amounts received may be less than the caps stated above, as was the case in 2011. Under the terms of the Agreement, if we grant other licenses with lower royalty rates to third parties (as defined in the Agreement), Cisco shall be entitled to the benefit of the lower royalty rates provided it agrees to the material terms of such other license. Under the terms of the Agreement, we have certain obligations to Cisco and if we materially breach such terms, Cisco will be entitled to stop paying royalties to us. This would have a material adverse effect on our business, financial condition and results of operations. For more details about the July 2010 settlement, please see our Current Reports on Form 8-K filed with the Securities and Exchange Commission on July 20, 2010 and June 1, 2011.

upfront payments of approximately $32 million

$8 million through 2015 and $9 million per year thereafter

SEC 1 Form (Exh. 1043)

Patent Owner Response at 56-57 (Paper 42); Petitioners' Reply at 15 (Paper 42)

Proposed Amendment

Claim 10 (proposed substitute for Claim 6, if Claim 6 is found unpatentable): Method for remotely powering access equipment in an Ethernet data network, comprising,

providing an Ethernet data node adapted for data switching, an access device adapted for data transmission, at least one data signaling pair connected between the data node and the access device and arranged to transmit data therebetween, a main power source connected to supply power to the data node, and a secondary power source arranged to supply power from the data node via said data signaling pair to the access device,

delivering a low level current from said main power source to the access device over said data signaling pair,

sensing a voltage level on the data signaling pair in response to the low level current,

determining whether the access device is capable of accepting remote power based on the sensed voltage, and

controlling power supplied by said secondary power source to said access device in response to a preselected condition of said voltage level.

Motion to Amend at 2-3 (Paper 43)

For Matsuno: Reply / Motion to Amend at 3 (Paper 65) last paragraph; Patent Owner Motion to Amend at 9 (Paper 43) last paragraph; For Woodmas: Reply to Opposition to Motion to Amend at 4 (Paper 65) first full paragraph; Knox Decl. ¶286; id. ¶288; for De Nicolo, Patent Owner Response at 48 (Paper 42) second full paragraph; For Chang: *Motion to Amend at 15 (Paper 43) second paragraph*; Patent Owner Preliminary Reponses at 50 (Paper 16) second paragraph

Telco

Matsuno

- ✗ Ethernet
- ✓ ~~determining step~~

Television

Woodmas

- ✗ Ethernet
- ✗ data network
- ✓ ~~determining step~~

Ethernet

De Nicolo

- ✓ Ethernet
- ✓ data network
- ✗ determining step
- ✗ low level current step
- ✗ sensing step
- ✗ controlling step

Chang

- ✓ Ethernet
- ✓ data network
- ✗ determining step
- ✗ low level current step
- ✗ sensing step
- ✗ controlling step

determining whether the access device is capable of accepting remote power based on the sensed voltage, and

- ❑ designed to accept remote power
- ❑ currently needs remote power

78. In my opinion, the broadest ordinary and customary meaning of determining if the access device is capable of accepting power, when read in light of the specification, requires determining if the access device is currently able to receive power.

79. In order to be able to currently receive power, the device would not (1) only have to be designed to receive power, but would also have to be in a state in (2) which it currently needs and would use power, if applied. This understanding is

Zimmerman 2nd Decl. ¶ 78-79 (Exh. 1041)

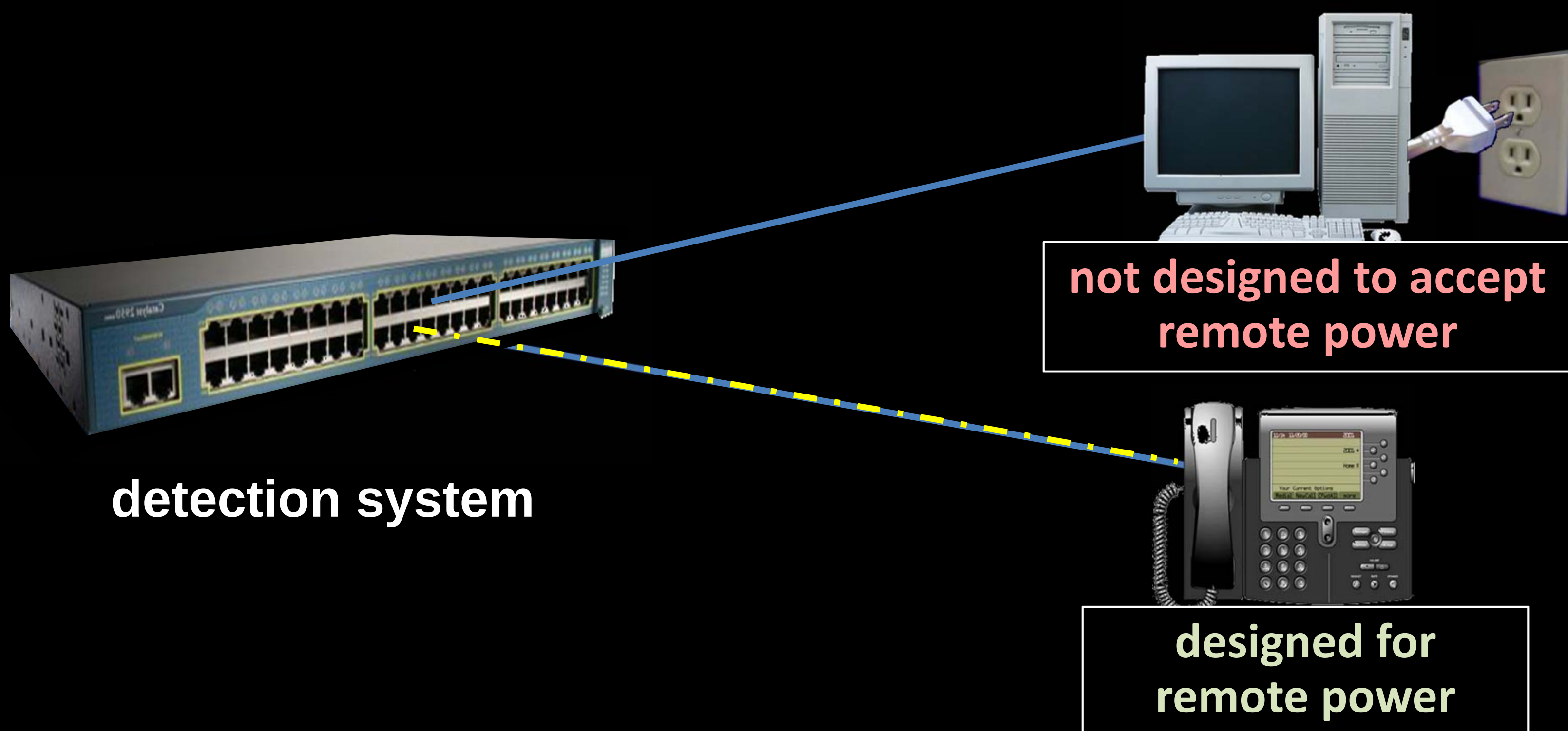
Patent Owner Reply / Motion to Amend at 3 (Paper 65)

determining whether the access device is capable of accepting remote power based on the sensed voltage, and

- designed to accept remote power
- currently needs remote power

using a coded response with a unique MAC address. When this process is complete the remote equipment is identified as known access equipment capable of accepting remote power.

'930 Patent 3:23-27 (Exh. 1001)



Reply Motion to Amend at 3; Knox Decl. ¶248 (N1-2024); Knox Decl. ¶250 (N1-2024)

determining whether the access device is capable of accepting remote power based on the sensed voltage, and

- ❑ designed to accept remote power
- ❑ ~~currently needs remote power~~

using a coded response with a unique MAC address. When this process is complete the remote equipment is identified as known access equipment capable of accepting remote power.

'930 Patent 3:23-27 (Exh. 1001)

measuring a voltage drop in the return path. There are three states which can be determined: no voltage drop, a fixed level voltage drop or a varying level voltage drop. If no voltage drop is detected then the remote equipment does not contain a dc resistive termination, and this equipment is identified as unable to support remote power feed. If a fixed voltage level is detected then the remote equipment contains a dc resistive termination (a "bob smith" is typical for Ethernet terminations), and this equipment is identified as unable to support remote power feed.

If a varying voltage level is detected, this identifies the presence of dc-dc switching supply in the remote equipment.

'930 Patent 3:1-13 (Exh. 1001)

Patent Owner Reply at 3 (Paper 65)

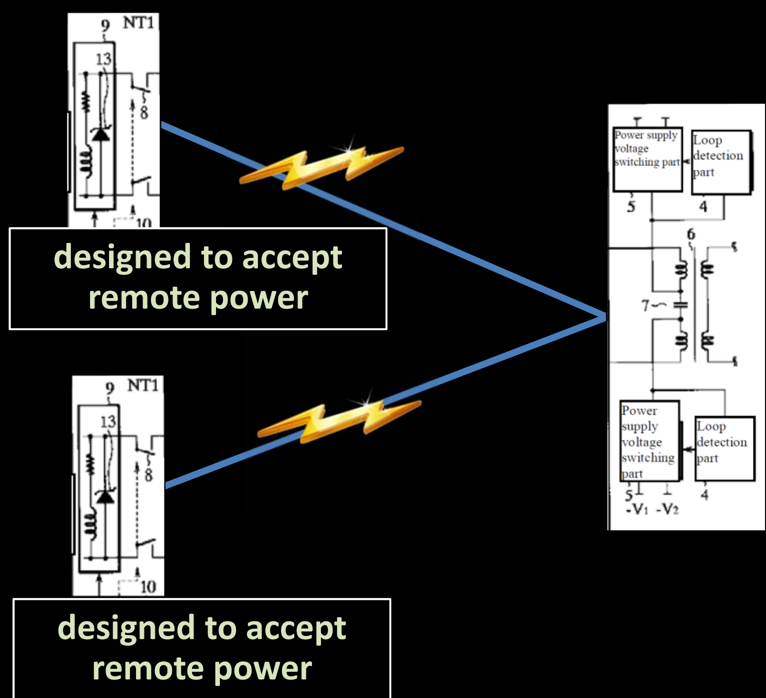
determining whether the access device is capable of accepting remote power based on the sensed voltage, and

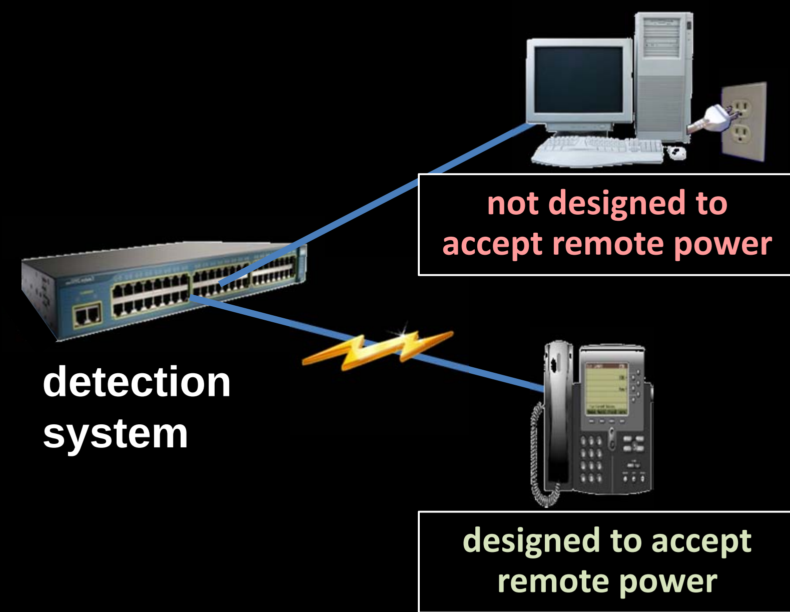
❑ designed to accept remote power

Matsuno

THE WITNESS: Well, as I stated before, Matsuno did not -- does not, to my recollection, talk about devices that are not capable of accepting remote power.

Zimmerman Depo. 47:16-18 (Exh. 2016)





Motion to Amend at 11 (Paper 43); Reply / Motion to Amend at 3 (Paper 65); Knox Decl. ¶248 (N1-2024) determining whether the access device is ~~capable of accepting remote power~~ based on the sensed voltage, and

❑ **designed to accept remote power**

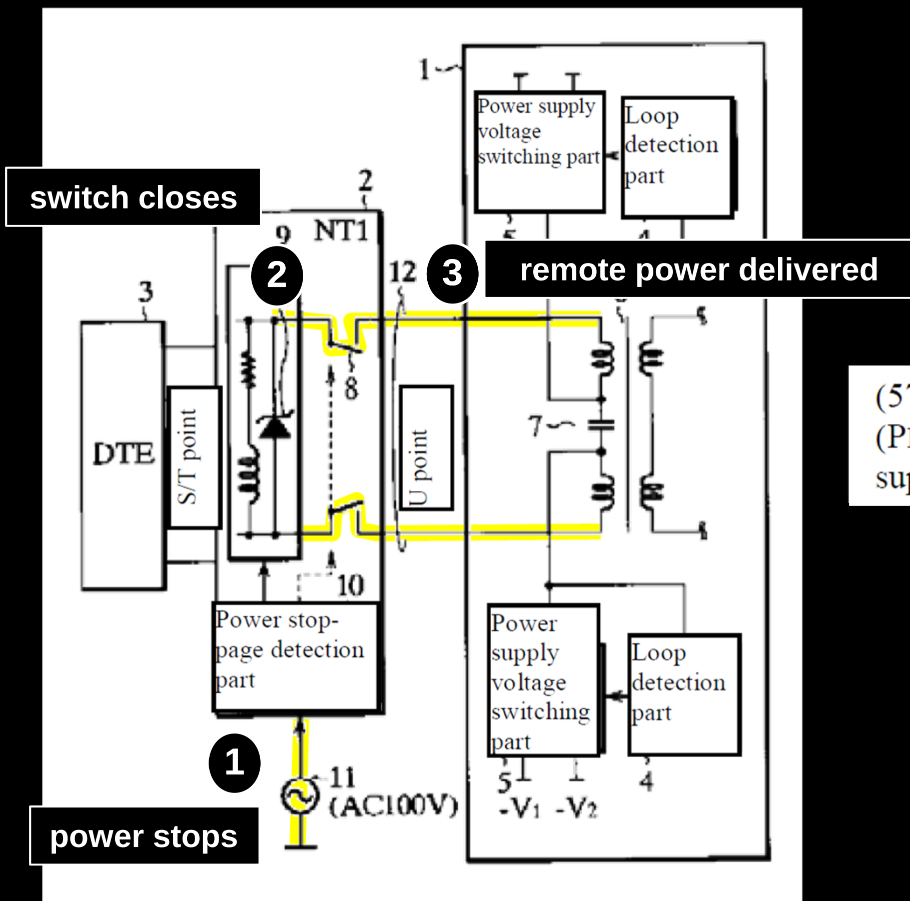


Fig. 1 (Exh. 1004)

(57) (ABSTRACT)
(PROBLEM) To provide a power supply circuit that switches power supply voltage and supplies the desired power while ensuring safety.

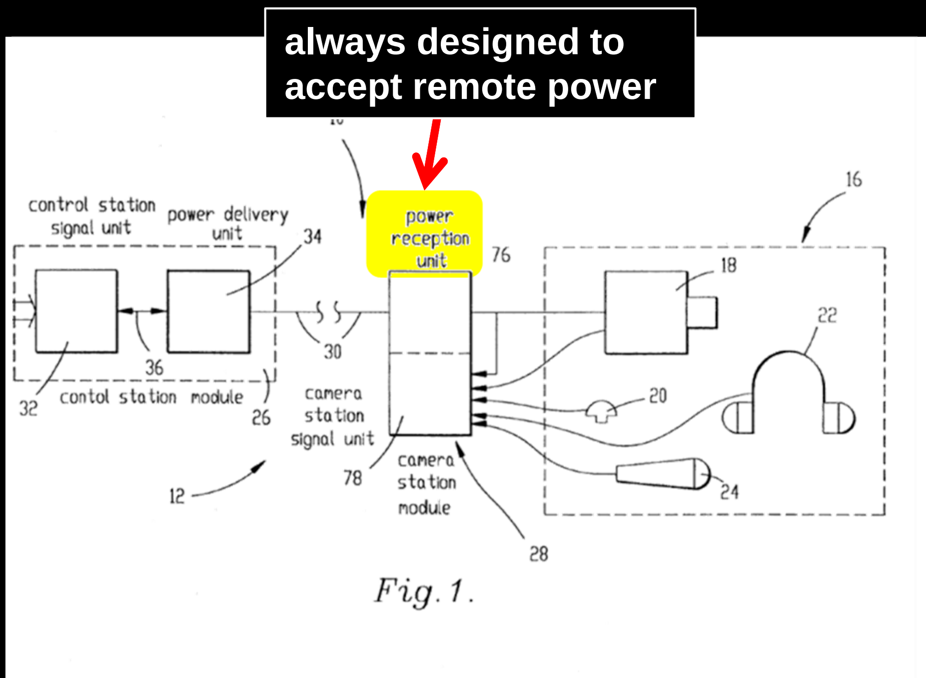
Matsuno Abstract (Exh. 1004)

Motion to Amend at 11 (Paper 43): Knox Decl. ¶263 (N1-2024): Knox Decl. ¶279 (N1-2024)

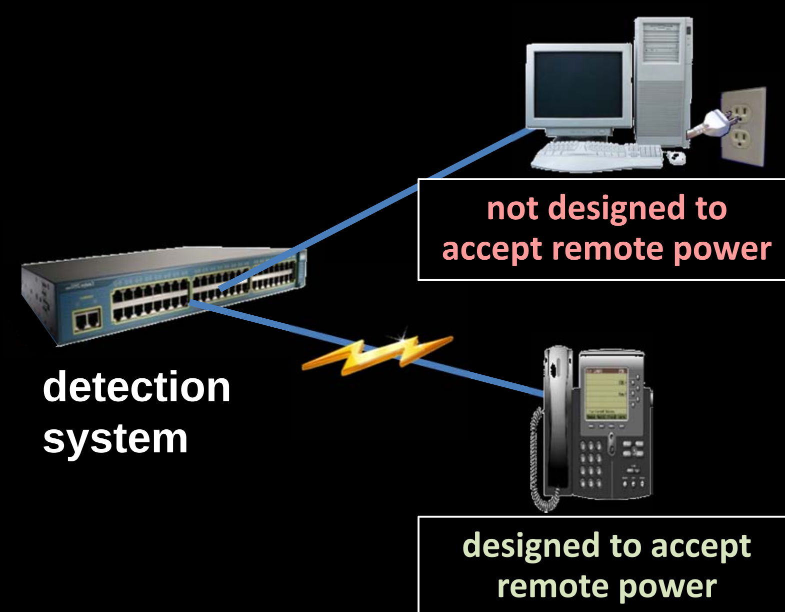
determining whether the access device is capable of accepting remote power based on the sensed voltage, and

❑ designed to accept remote power

Woodmas



Woodmas Fig. 1 (Exh. 1040)



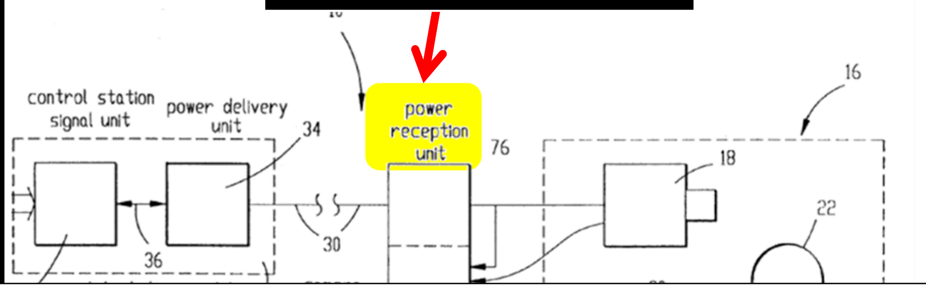
Reply / Motion to Amend at 4 (Paper 65); Knox Decl. ¶248 (N1-2024); Knox Decl. ¶294 (N1-2024)

determining whether the access device is capable of accepting remote power based on the sensed voltage, and

❑ designed to accept remote power

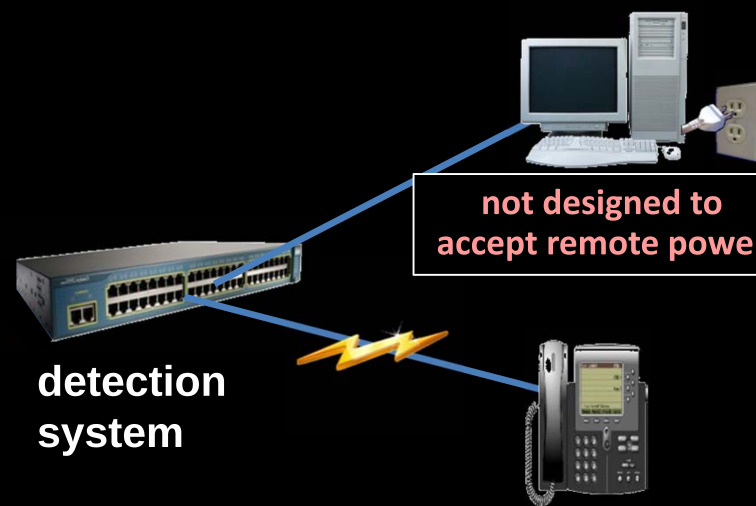
Woodmas

always designed to accept remote power



station at a desired level"). Woodmas does not determine whether a device connected to the coaxial cable can accept remote power, because the system disclosed in Woodmas assumes that all connected devices are compatible or "captive" and capable of accepting remote power. In Woodmas, each power reception unit (76) connected to cable (30) is capable of accepting remote power. The system does not determine whether the camera unit is capable of accepting remote power. The cable provides power independent of what is connected.

Knox Decl. ¶294 (Exh. 2024)



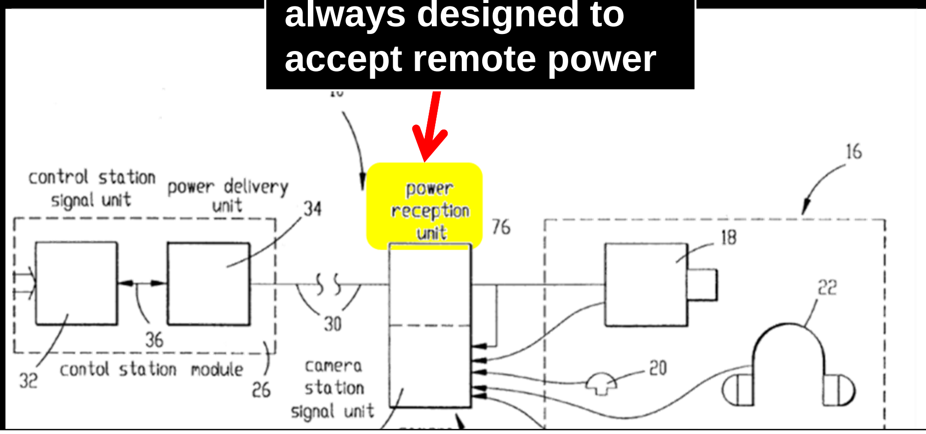
See slide 59; Knox Decl. ¶294 (N1-2024)

determining whether the access device is capable of accepting remote power based on the sensed voltage, and

❑ designed to accept remote power

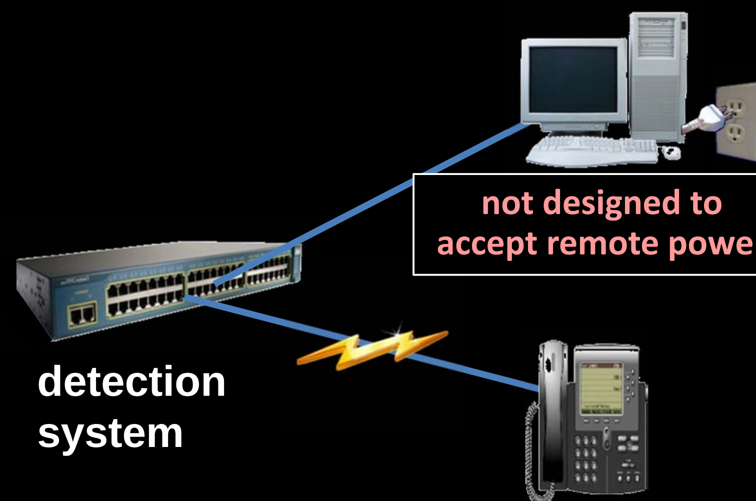
Woodmas

always designed to accept remote power



¶¶248-252; '930, 1:42-44; '930, 1:14-19. The problem addressed by Woodmas is very different – to make the cabling for on-location production of television programs less expensive, less heavy, and less awkward without requiring a separate power supply (Woodmas, 1:15-63) and to apply the appropriate voltage (Woodmas, Abstract, the system "maintain[s] the received voltage at the camera station at a desired level"). Woodmas does not determine whether a device

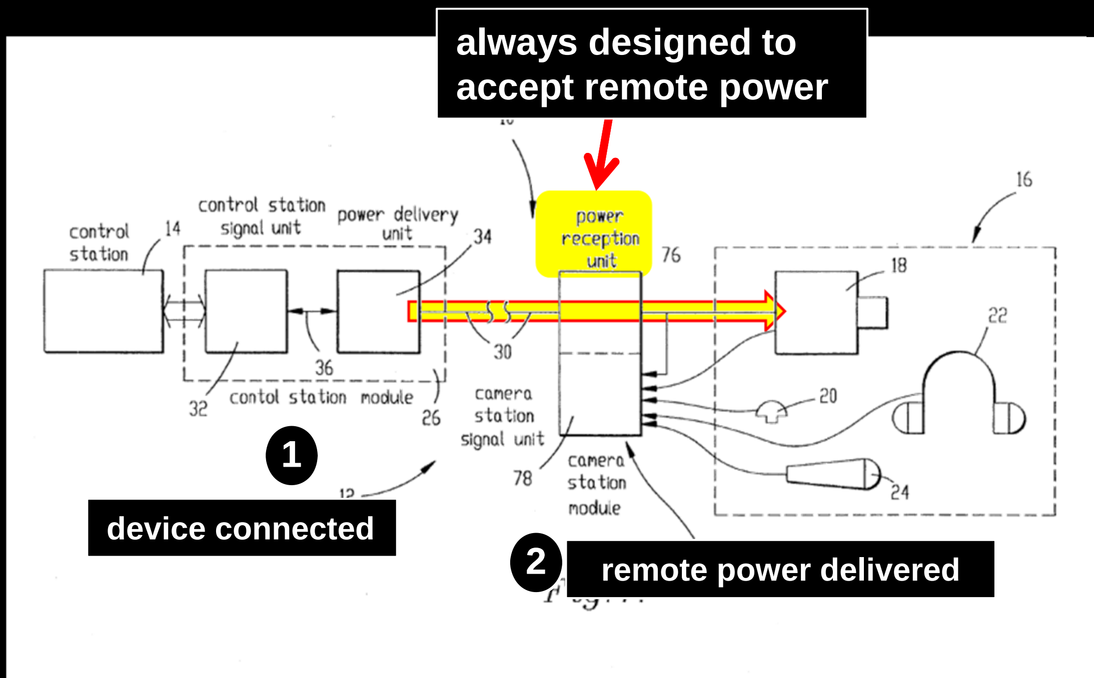
Knox Decl. ¶294 (Exh. 2024)



See Slide 59; Knox Decl. ¶294 (N1-2024)

determining whether the access device is ~~capable of accepting remote power~~ based on the sensed voltage, and

❑ **designed to accept remote power**



Woodmas Fig. 1 (Exh. 1040)

Reply / Motion to Amend at 4 (Paper 65): Knox Decl. ¶294 (N1-2024)

combinations still have missing elements

Telco

Matsuno

✗ Ethernet
✓ ~~determining step~~

Television

Woodmas

✗ Ethernet
✗ data network
✓ ~~determining step~~

Ethernet

De Nicolo

✓ Ethernet
✓ data network
✗ determining step
✗ low level current step
✗ sensing step
✗ controlling step

Chang

✓ Ethernet
✓ data network
✗ determining step
✗ low level current step
✗ sensing step
✗ controlling step

See notes to Slide 53 for cites covering all but the title of the slide; For the title of the slide, see Motion to Amend at 12 – 13 (Paper 43)

references should not be combined

Field

‘930 (Ethernet)	FIELD OF THE INVENTION This invention broadly relates to the powering of 10/100 Ethernet compatible equipment. The invention more par- **‘930 Patent 1:11-14 (Exh. 1001)**
Matsuno (Telco)	32. ISDN equipment enables both voice and data communication over telephone lines. For example, U.S. Patent No. 5,216,704 (“the ’704 Patent”) (AV- **Zimmerman Decl. ¶32 (Exh. 1011)**
Woodmas (Television)	1. Field of the Invention The present invention relates to the field of television production using remotely located cameras. More par- **Woodmas 1:6-8 (AV-1040)**

Reply / Motion to Amend at 5 (Paper 65); Knox Decl. ¶311 (N1-2024); Knox Decl. ¶183 (N1-2015); Knox Decl. ¶284 (N1-2024)

references should not be combined

Problem addressed

'930 (Ethernet)	determine which devices can accept remote power	remote equipment being connected to the network; determining whether the remote equipment is capable of accepting remote power in a non-intrusive manner; delivering the '930 Abstract (Exh. 1001)
Matsuno (Telco)	deliver safe voltages when not using remote power	(57) (ABSTRACT) (PROBLEM) To provide a power supply circuit that switches power supply voltage and supplies the desired power while ensuring safety. Matsuno Abstract (Exh. 1004)
Woodmas (Television)	maintain voltage at desired level	unit. The delivery unit controls the delivered voltage in accordance with the status signal in order to maintain the received voltage at the camera station at a desired level in order to compensate for cable voltage drop. Woodmas Abstract (Exh. 1040)

Reply – Motion to Amend at 5 (Paper 65); Motion to Amend at 6 (Paper 43); Knox Decl. ¶185 (N1-2024); Knox Decl. ¶279 (N1-2024); Knox Decl. ¶248 (N1-2024)

Deleted

determining whether the access device is capable of accepting remote power based on the sensed voltage, and

❑ designed to accept remote power

52. When low level power is imposed on cable 30 and power reception unit 76 is present and operational, oscillator 88 (FIG. 3) senses the low level voltage delivered to reception unit 76, produces the power status signal representative of the low level voltage and returns the signal by way of cable 30 back to delivery unit 34. In this way both the presence and functionality of power delivery unit 76 are checked before full power is imposed on cable 30.

Woodmas 7:44-52 (Exh. 1040)

no discussion of:

- **"capable of accepting remote power"**
- **"designed to accept remote power"**

93. Woodmas discloses a method for powering data equipment (e.g., camera station 16, camera station module 28, or devices 18–24) over a network.

Zimmerman ¶¶ 93-97 (Exh. 1041)

Reply Motion to Amend at 4 (Paper 65); Zimmerman Decl. ¶¶ 93-97 (AV-1041)

determining whether the access device is ~~capable of accepting remote power~~ based on ~~the sensed voltage~~, and

a power status signal

"When low level power is imposed on cable 30 and power reception unit 76 is present and operational, oscillator 88 (FIG. 3) senses the low level voltage delivered to reception unit 76, produces the power status signal representative of the low level voltage and returns the signal by way of cable 30 back to delivery unit 34. In this way both the presence and functionality of power delivery unit 76 are checked before full power is imposed on cable 30."

Avaya's Opposition at 10 (Paper 57)

296. Reason 2: Woodmas does not disclose "determining whether the access device is capable of accepting remote power based on the sensed voltage." As claimed in the proposed additional step, the "determining" must be "based on the sensed voltage." The determining of the proper voltage in Woodmas (not, as set forth above, whether the access device is capable of accepting remote power) is not based on the sensed voltage (*i.e.*, the voltage sensed "in response to the low level current") but rather on a returning data signal down coaxial cable (30).

Knox Decl. ¶296 (Exh. 2024)

Reply / Motion to Amend at 4 (Paper 65); Knox Decl. ¶296 (N1-2024):

Deleted

determining whether the access device is ~~capable of accepting remote power~~ based on ~~the sensed voltage~~, and

Patent Owner Reply at 4-5 (Paper 65); See Slide 50 for diagram of Chang.

Even with respect to Chang, Network-1's Motion confirms—rather than contests—that the proposed amendments are unpatentable. First, Network-1 concedes that Chang "…teaches the concept of determining whether an access device is capable of accepting remote power." Motion at 15. It therefore relies on

Avaya's Opposition at 8 (Paper 57)

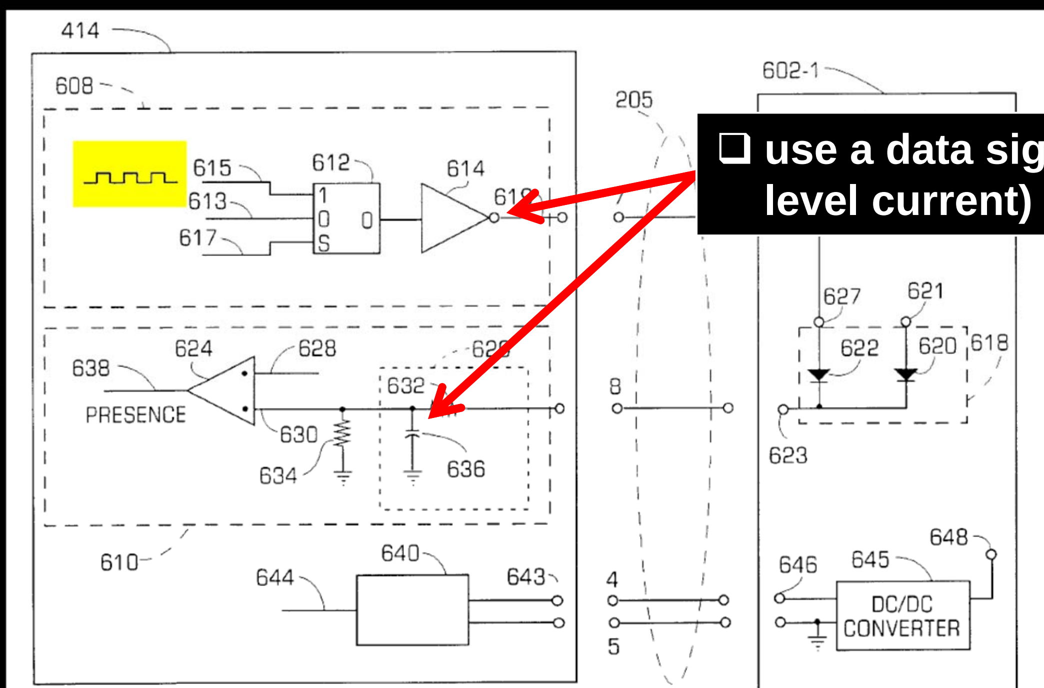


FIGURE 6a

- **use a data signal (not a low level current) for detection**

Chang Fig. 6a (Exh. 1006)

I. Petitioner Reply to Patent Owner Response and Patent Owner Reply to Opposition To Amend

A reply may only respond to arguments raised in the corresponding opposition. § 42.23. While replies can help crystalize issues for decision, a reply that raises a new issue or belatedly presents evidence will not be considered and may be returned. The Board will not attempt to sort proper from improper portions of the reply. Examples of indications that a new issue has been raised in a reply include new evidence necessary to make out a *prima facie* case for the patentability or unpatentability of an original or proposed substitute claim, and new evidence that could have been presented in a prior filing.

Trial Practice Guide 77 Fed. Reg. at 48767

Trial Practice Guide 77 Fed. Reg. at 48767; Patent Owner Preliminary Response at 18-19 (Paper 16)

Not obvious over Matsuno in light of De Nicolo

- missing elements
- teaching away
- secondary factors

Patent Owner Response, Table of Contents (Paper 42)

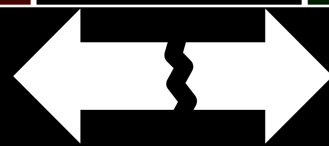
references should not be combined

Telco

Ethernet

Matsuno

De Nicolo



Knox Decl. ¶¶304; 181-187 (Exh. 2015)
Knox Depo. 253:2-254:5 (Exh. 2029)

Chang

Reply / Motion to Amend at 5 (Paper 65);
Response to Observations at 9-10 (Paper 90)

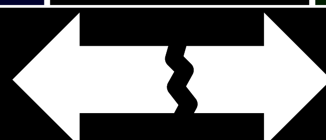
references should not be combined

Ethernet

De Nicolo

Television

Woodmas



Knox Decl. ¶¶ 310-314

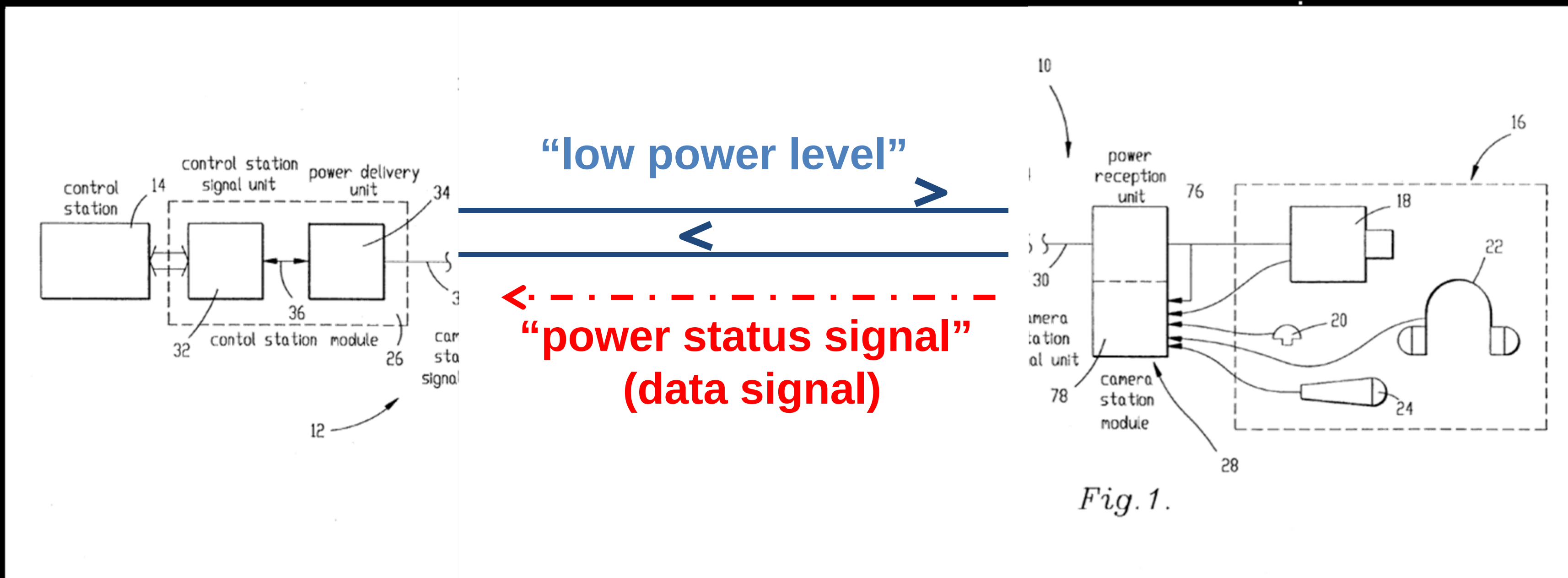
Chang

no evidence

Zimmerman Decl. ¶_______

Reply / Motion to Amend at 5 (Paper 65); Knox Decl. ¶310 (N1-2024)

determining whether the access device is ~~capable of accepting remote power~~ based on ~~the sensed voltage~~, and



Woodmas Fig. 1 (Exh. 1040)

later point in time than when the low level current is delivered. This is equivalent to Woodmas generating and then sensing the “power status signal” which is representative of the low level voltage that is based on the low level power delivered on cable 30. *See* Woodmas (AV-1030), at 7:39–52.

Avaya Observation 8 at 6 (Paper 80)

Reply / Motion to Amend at 4 (Paper 65); Knox Decl. ¶296 (N1-2024)