IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION

CHRIMAR SYSTEMS, INC.,
d/b/a CMS TECHNOLOGIES and
CHRIMAR HOLDING COMPANY, LLC

Plaintiffs,

v.

PANASONIC CORPORATION and
PANASONIC CORPORATION OF
NORTH AMERICA.

Defendants.

Civil Action No. 6:17-cv-00637

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Chrimar Systems, Inc. d/b/a CMS Technologies ("Chrimar Systems") and Chrimar Holding Company, LLC ("Chrimar Holding") (collectively, "Chrimar" or "Plaintiffs") file this Complaint against Defendants Panasonic Corporation and Panasonic Corporation of North America (collectively, "Defendants") for infringement of U.S. Patents Nos. 8,942,107, 9,812,825, 8,902,760, and 9,019,838, and hereby allege as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. §§ 1, *et seq*.

PARTIES

2. Plaintiff Chrimar Systems, Inc. d/b/a CMS Technologies is a Michigan corporation with a place of business located at 36528 Grand River Avenue, Suite A-1, Farmington Hills, Michigan 48335.

3. Plaintiff Chrimar Holding Company, LLC is a Texas limited liability company with a place of business located at 911 NW Loop 281, Suite 211-30, Longview, Texas 75604.

4. Chrimar was the first company to employ DC current within a BaseT network in the early 1990s and has received a number of US patents for this very important technology. Chrimar continues to market its EtherLock® family of products for asset control, management and security, including the including the EtherLock® II and EtherLock IDentification (ELID) products:

http://cmstech.com/security_solutions/products/products.html

5. Chrimar's EtherLock® II product practices certain claims of the `838 Patent, and the installed ELID/NIC-Stick circuitry practice certain claims of the `107, `760, and `825 Patents. *See also* http://www.cmspatents.com/.

6. Chrimar has entered into numerous non-exclusive licenses for certain equipment under certain Chrimar patents including certain Power over Ethernet (PoE) equipment designed for deployment within a BaseT Ethernet network. *See, e.g.*, https://realtimepressrelease.com/press-releases-tagged-with/chrimar/.

7. Upon information and belief, Defendant Panasonic Corporation is a Japanese corporation having a place of business at 1006 Oaza Kadoma, Kadoma 571-8501 Osaka, Japan, and can be served through its registered agent The Corporation Trust Company at Corporation Trust Center, 1209 Orange Street, Wilmington, DE 19801.

8. Upon information and belief, Defendant Panasonic Corporation of North America is a corporation organized under the laws of the State of Delaware with its principal place of business at One Panasonic Way, Secaucus, NJ 07094, and can be served through its registered agent CT Corporation System at 1999 Bryan Street, Suite 900, Dallas, Texas 75201-3163.

9. Upon information and belief, Defendant Panasonic Corporation of North America is a wholly owned subsidiary of Panasonic Corporation.

JURISDICTION AND VENUE

10. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

11. Defendants are subject to this Court's specific and general personal jurisdiction due to their substantial business in this forum. For example, upon information and belief, Defendants are subject to the specific personal jurisdiction of this Court because Chrimar's claims for patent infringement arise from Defendants' acts of infringement in the State of Texas. These acts of infringement include selling infringing products in the State of Texas and placing infringing products into the stream of commerce through an established distribution channel with full awareness that substantial quantities of the products have been shipped into the State of Texas. Therefore, this Court has personal jurisdiction over Defendants under the Texas long-arm statute, TEX. CIV. PRAC. & REM. CODE § 17.042.

12. Venue is proper in this judicial district under 28 U.S.C. § 1400(b). Defendant Panasonic Corporation of North America has a regular and established place of business in this

District at 3461 Plano Pkwy, The Colony, TX 75056, and has committed and continues to commit acts of infringement in this District. For example, Defendant's regular and established place of business in this District is a physical building, depicted below, and according to the Denton Central Appraisal District is 100% owned by Panasonic Corporation of North America. *See In re Cray Inc.*, 871 F.3d 1355, 1360 (Fed. Cir. 2017).

https://www.dentoncad.com/home/details?search=675368&year=2018

13. Further, Panasonic Corporation, a foreign corporation, can be sued in any district, including this District. *See Brunette Machine Works, Ltd. v. Kockum Industries, Inc.*, 406 U.S. 706, 714 (1972) (discussed in *TC Heartland LLC v. Kraft Foods Group Brands LLC*, 137 S. Ct. 1514, 1520, n.2 (2017)).

PATENTS-IN-SUIT

14. Chrimar Systems is the owner and the assignee of U.S. Patent No. 8,942,107 (the "`107 Patent"), entitled "Piece of Ethernet Terminal Equipment" and Chrimar Holding holds the exclusive right to license the `107 Patent. Chrimar has ownership of all substantial rights in the

`107 Patent, including the right to exclude others and to enforce, sue and recover damages for past and future infringement. A true and correct copy of the `107 Patent is attached as Exhibit A.

15. The `107 Patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

16. Chrimar Systems is the owner and assignee of U.S. Patent No. 9,812,825 (the "`825 Patent"), entitled "Ethernet Device" and Chrimar Holding holds the exclusive right to license the `825 Patent. Chrimar has ownership of all substantial rights in the `825 Patent, including the right to exclude others and to enforce, sue and recover damages for past and future infringement. A true and correct copy of the `825 Patent is attached as Exhibit B.

17. The `825 Patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

18. Chrimar Systems is the owner and assignee of U.S. Patent No. 8,902,760 (the "`760 Patent"), entitled "Network System and Optional Tethers" and Chrimar Holding holds the exclusive right to license the `760 Patent. Chrimar has ownership of all substantial rights in the `760 Patent, including the right to exclude others and to enforce, sue and recover damages for past and future infringement. A true and correct copy of the `760 Patent is attached as Exhibit C.

19. The `760 Patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

20. Chrimar Systems is the owner and the assignee of U.S. Patent No. 9,019,838 (the "`838 Patent"), entitled "Central Piece of Network Equipment" and Chrimar Holding holds the exclusive right to license the `838 Patent. Chrimar has ownership of all substantial rights in the `838 Patent, including the right to exclude others and to enforce, sue and recover damages for past and future infringement. A true and correct copy of the `838 Patent is attached as Exhibit D.

21. The `838 Patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

22. The `107, `825, `760, and `838 Patents are collectively the "Patents-in-Suit."

23. The Patents-in-Suit generally cover plug and play automation and/or asset control capabilities employed by certain BaseT Ethernet equipment including powered devices ("PDs") and power sourcing equipment ("PSEs") that comply with or are compatible with certain portions of the IEEE Standards commonly referred to as PoE Standards (e.g., the IEEE 802.3af or IEEE 802.3at standards).

ACCUSED PRODUCTS

24. Upon information and belief, Defendants make, use, offer to sell, sell, and/or import Power over Ethernet powered devices and/or power sourcing equipment. Such products include, but are not limited to:

PRODUCT TYPE	MODEL NUMBER
Network Camera (PD)	BB-HCM403A
Network Camera (PD)	BB-HCM547A
Network Camera (PD)	WV-SBV111M
Network Camera (PD)	WV-SBV131M
Network Camera (PD)	WV-SC384
Network Camera (PD)	WV-SC385
Network Camera (PD)	WV-SC387A
Network Camera (PD)	WV-SC588A
Network Camera (PD)	WV-SF132
Network Camera (PD)	WV-SF135
Network Camera (PD)	WV-SF138
Network Camera (PD)	WV-SF438
Network Camera (PD)	WV-SF448
Network Camera (PD)	WV-SFN110
Network Camera (PD)	WV-SFN130
Network Camera (PD)	WV-SFN310A
Network Camera (PD)	WV-SFN311A
Network Camera (PD)	WV-SFN311L
Network Camera (PD)	WV-SFN480

Network Camera (PD)	WV-SFN531
Network Camera (PD)	WV-SFN611L
Network Camera (PD)	WV-SFN631L
Network Camera (PD)	WV-SFR310A
Network Camera (PD)	WV-SFR311A
Network Camera (PD)	WV-SFR531
Network Camera (PD)	WV-SFR611L
Network Camera (PD)	WV-SFR631L
Network Camera (PD)	WV-SFV110
Network Camera (PD)	WV-SFV110M
Network Camera (PD)	WV-SFV130
Network Camera (PD)	WV-SFV130M
Network Camera (PD)	WV-SFV310A
Network Camera (PD)	WV-SFV311A
Network Camera (PD)	WV-SFV481
Network Camera (PD)	WV-SFV531
Network Camera (PD)	WV-SFV611L
Network Camera (PD)	WV-SFV631L
Network Camera (PD)	WV-SFV631LT
Network Camera (PD)	WV-SFV781L
Network Camera (PD)	WV-SP102
Network Camera (PD)	WV-SP105
Network Camera (PD)	WV-SPN310A
Network Camera (PD)	WV-SPN311A
Network Camera (PD)	WV-SPN531A
Network Camera (PD)	WV-SPN611
Network Camera (PD)	WV-SPN631
Network Camera (PD)	WV-SPV781L
Network Camera (PD)	WV-SPW311AL
Network Camera (PD)	WV-SPW312L
Network Camera (PD)	WV-SPW531AL
Network Camera (PD)	WV-SPW532L
Network Camera (PD)	WV-SPW611
Network Camera (PD)	WV-SPW611L
Network Camera (PD)	WV-SPW631L
Network Camera (PD)	WV-SPW631LT
Network Camera (PD)	WV-ST162
Network Camera (PD)	WV-ST165
Network Camera (PD)	WV-SW115
Network Camera (PD)	WV-SW155
Network Camera (PD)	WV-SW155MA

Network Camera (PD)	WV-SW158
Network Camera (PD)	WV-SW172
Network Camera (PD)	WV-SW175
Network Camera (PD)	WV-SW395
Network Camera (PD)	WV-SW395A
Network Camera (PD)	WV-SW397B
Network Camera (PD)	WV-SW458
Network Camera (PD)	WV-SW458MA
Network Camera (PD)	WV-SW598A
Network Camera (PD)	WV-SW175
Network Camera (PD)	WV-X6531NS
Network Camera (PD)	WV-S6530N
Network Camera (PD)	WV-S6130
Network Camera (PD)	WV-X6531N
Network Camera (PD)	WV-6511N
Network Camera (PD)	WV-S6131
Network Camera (PD)	WV-S6111
Network Camera (PD)	WV-V6430L
Network Camera (PD)	WV-SUD638
Network Camera (PD)	WV-S2531LTN
Network Camera (PD)	WV-S2531LN
Network Camera (PD)	WV-S2231L
Network Camera (PD)	WV-S2211L
Network Camera (PD)	WV-S2131L
Network Camera (PD)	WV-S2131
Network Camera (PD)	WV-S2130
Network Camera (PD)	WV-S2111L
Network Camera (PD)	WV-S2110
Network Camera (PD)	WV-V2530LK
Network Camera (PD)	WV-V2530L1
Network Camera (PD)	WV-SBV111M
Network Camera (PD)	WV-SW152M
Network Camera (PD)	WV-SW152
Network Camera (PD)	WV-S1132
Network Camera (PD)	WV-S1131
Network Camera (PD)	WV-S1112
Network Camera (PD)	WV-S1111
Network Camera (PD)	WV-V1330LK
Network Camera (PD)	WV-V1330L1
Network Camera (PD)	WV-V1170
Network Camera (PD)	WV-SF448E

Network Camera (PD)	WV-SW174W
IP Phone (PD)	KX-NT560
IP Phone (PD)	KX-NT556
IP Phone (PD)	KX-NT553
IP Phone (PD)	KX-NT551
IP Phone (PD)	KX-NT546
IP Phone (PD)	KX-NT543
IP Phone (PD)	KX-NT505
IP Phone (PD)	KX-NTV150
IP Phone (PD)	KX-NTV160
IP Phone (PD)	KX-TGP600
Video Encoder (PD)	WJ-GXE500
Network Microphone (PD)	WV-SMR10
Network Switch (PSE)	M12eGLPWR+ / PN28128
Network Switch (PSE)	M16eGLPWR+ / PN28168
Network Switch (PSE)	M24eGLPWR+ / PN28248
Network Switch (PSE)	M5eGLPWR+ / PN28058
Network Switch (PSE)	M8eGLPWR+ / PN28088
Network Switch (PSE)	GA-AS48TPoE+
Network Switch (PSE)	GA-AS24TPoE+
Network Switch (PSE)	GA-AS16TPoE+
Network Switch (PSE)	GA-AS12TpoE+
Network Switch (PSE)	GA-AS10TPoE+
Network Switch (PSE)	GA-AS4TPoE+
Network Switch (PSE)	S24GPWR

25. These products, and any of Defendants' other similar products, are collectively referred to herein as the "Accused Products." Defendants' Accused Products that employ plug and play automation and/or asset control capabilities as claimed in the Patents-in-Suit are referred to as the "Accused PD Products" and "Accused PSE Products."

26. Upon information and belief, the Accused Products are offered for sale and sold throughout the United States, including within this District.

27. Upon information and belief, Defendants have purposefully and voluntarily placed the Accused Products into the stream of commerce with the expectation that these

products will be purchased and used by end users in the United States, including end users in this District.

28. Upon information and belief, Defendants provide direct and indirect support concerning the Accused Products to end users, including end users within this District.

COUNT I
INFRINGEMENT OF U.S. PATENT NO. 8,942,107

29. Chrimar alleges and hereby incorporates by reference every allegation made in the foregoing paragraphs of this Complaint as if each were separately set forth herein.

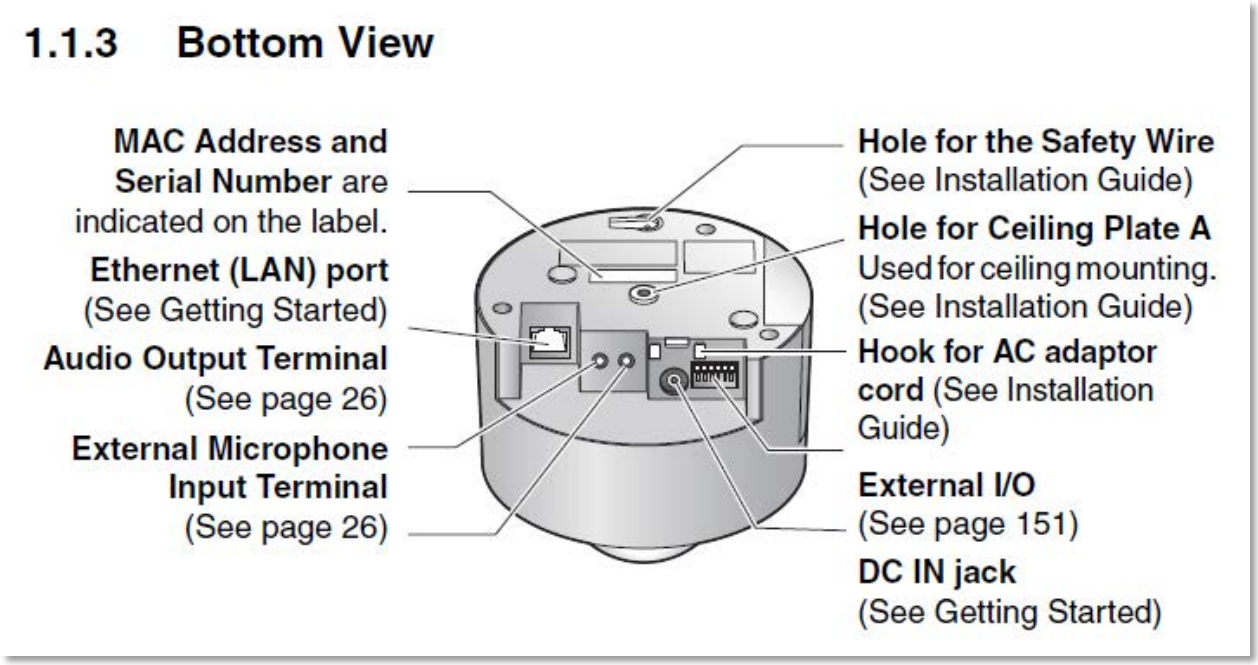
30. In violation of 35 U.S.C. § 271, Defendants have directly infringed and continue to directly infringe, both literally and/or under the doctrine of equivalents, the `107 Patent by making, using, offering for sale, selling, and/or importing the Accused PD Products in the United States, including within this District, that infringe at least claim 103 across claims 5, 6, 16, 56, and 71, and claim 125 across claims 113 and 122 of the `107 Patent without the authority of Chrimar.

31. The identified claims of the `107 Patent are presumed valid.

32. Each of the Accused PD Products is a piece of BaseT Ethernet data terminal equipment. For example, the BB-HCM403A Network Camera is a device that can originate and terminate Ethernet data and Ethernet data transmissions, and is configured to communicate with other devices over a BaseT Ethernet network.

https://security.panasonic.com/products/bb-hcm403/

33. Each of the Accused PD Products has an Ethernet connector comprising first and second pairs of contacts. For example, the BB-HCM403A Network Camera has an RJ-45 connector (labelled "Ethernet (LAN) port"), which has four pairs of contacts:



http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf

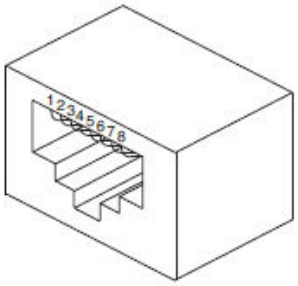


Figure 33–5—PD and PSE eight-pin modular jack

IEEE 802.3af standard, Figure 33-5

34. Each of the Accused PD Products uses an Ethernet connector's first and second pairs of contacts to carry Ethernet communication signals. For example, the pairs of contacts of the Ethernet connector of the BB-HCM403A Network Camera can carry 10BaseT and 100BaseTX Ethernet communication data signals:

Interface	10Base-T/100Base-TX Ethernet RJ-45 connector x 1

http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf

35. Each of the Accused PD Products is a powered-off end device prior to receiving its operational power. For example, the BB-HCM403A Network Camera is a powered-off end device when requesting its operational power or when it is not physically connected to the network.

36. Each of the Accused PD Products has at least one path for the purpose of drawing DC current, the at least one path coupled across at least one of the contacts of the first pair of contacts and at least one of the contacts of the second pair of contacts of its Ethernet connector. For example, the BB-HCM403A Network Camera claims compliance with the IEEE 802.3af standard:

PoE*2 (Power over Ethernet) Compliant with a Power Receiving Device Integrated

The camera is compliant with PoE (IEEE 802.3af) standards, contains a power receiving device that enables it to receive power via an Ethernet cable, and supports PoE*2. This allows you to mount the camera even if there is no power

Power Consumption	PoE: (48 V, IEEE 802.3af-compliant Power over Ethernet): About 5.5 W

http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, pp. 2, 180.

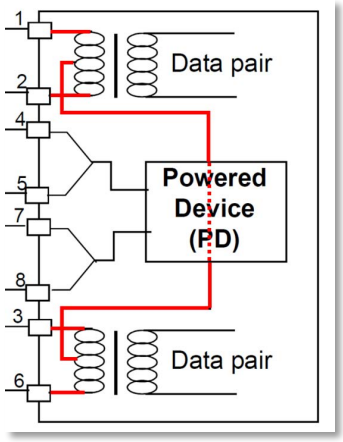
37. The IEEE 802.3af standard explains:

33.3.1 PD PI

The PD shall be capable of accepting power on either of two sets of PI conductors. The two conductor sets are named Mode A and Mode B. In each four-wire connection, the two wires associated with a pair are at the same nominal average voltage. Figure 33–5 in conjunction with Table 33–7 illustrates the two power modes.

Table 33–7—PD pinout

Conductor	Mode A	Mode B
1	Positive V_{Port}, Negative V_{Port}	
2	Positive V_{Port}, Negative V_{Port}	
3	Negative V_{Port}, Positive V_{Port}	
4		Positive V_{Port}, Negative V_{Port}
5		Positive V_{Port}, Negative V_{Port}
6	Negative V_{Port}, Positive V_{Port}	
7		Negative V_{Port}, Positive V_{Port}
8		Negative V_{Port}, Positive V_{Port}



IEEE 802.3af standard, 33.3.1, Table 33-7, and Figure 33-4 (annotated, emphasis added).

38. Each Accused PD Product draws different magnitudes of DC current flow via the at least one path, the different magnitudes of DC current flow to result from at least one condition applied to at least one of the contacts of the first and second pairs of contacts of its Ethernet connector. For example, the BB-HCM403A Network Camera claims compliance with the IEEE 802.3af standard. *See* http://ssbu-t.psn-

web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, p. 2. IEEE 802.3af explains:

33.3.3 PD valid and non-valid detection signatures

A PD shall present a valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will accept power via the PI, but is not powered via the PI.

A PD shall present a non-valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will not accept power via the PI.

When a PD becomes powered via the PI, it shall present a non-valid detection signature on the set of pairs from which is it not drawing power.

The valid and non-valid detection signature regions are separated by guardbands. The guardbands for the V-I slope are the ranges 12KΩ to 23.75KΩ and 26.25KΩ to 45KΩ. A PD that presents a signature in a guard-band is non-compliant.

V-I slope is the effective resistance calculated from the two voltage/current measurements made during the detection process.

$$\text{V-I slope} = (V_2 - V_1)/(I_2 - I_1) \qquad (33\text{–}1)$$

where (V_1, I_1) and (V_2, I_2) are measurements made at the PD PI.

The valid PD detection signature shall have the characteristics of Table 33–8.

IEEE 802.3af standard, 33.3.3

39. Each of the Accused PD Products can convey information about itself (e.g., while powered-off) via the magnitudes of the DC current flow. For example, the BB-HCM403A Network Camera claims compliance with the IEEE 802.3af standard. *See* http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, p. 2. IEEE 802.3af explains:

> The Power Sourcing Equipment (PSE) is located at an endpoint or midspan, separate from and between the MDIs, and provides power to the Powered Device (PD) over the Link Section. The PSE detection protocol distinguishes a compatible PD from non-compatible devices and precludes the application of power and possible damage to non-compatible devices."

Table 33–8—Valid PD detection signature characteristics, measured at PD input connector

Parameter	Conditions	Minimum	Maximum	Unit
V-I Slope (at any 1V or greater chord within the voltage range conditions)	2.7V to 10.1V	23.75	26.25	KΩ
V offset			1.9	V
I offset			10	μA
Input capacitance	2.7V to 10.1 V	0.05	0.12	μF
Input inductance	2.7V to 10.1 V		100	μH

A non-valid detection signature shall have one or both of the characteristics in Table 33–9

Table 33–9—Non-valid PD detection signature characteristics, measured at PD input connector

Parameter	Conditions	Range of values	Unit
V-I Slope	V < 10.1V	Either greater than 45 or less than 12	KΩ
Input Capacitance	V < 10.1V	Greater than 10	μF

IEEE 802.3af standard, Abstract, Table 33-8, and Table 33-9

40. Upon information and belief, discovery will show that the at least one path is integrated into each of the Accused PD Products.

41. Each of the Accused PD Products (e.g., while powered-off) can draw different magnitudes of DC current flow via at least one of the contacts of the first and second pairs of contacts of its Ethernet connector. For example, the BB-HCM403A Network Camera claims compliance with the IEEE 802.3af standard. *See* http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, p. 2. The IEEE 802.3af standard prescribes the presentation of valid detection signatures by drawing different

magnitudes of DC current flow in response to at least one electrical connection (e.g. a voltage or current) applied to a contact:

33.3.3 PD valid and non-valid detection signatures

A PD shall present a valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will accept power via the PI, but is not powered via the PI.

A PD shall present a non-valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will not accept power via the PI.

When a PD becomes powered via the PI, it shall present a non-valid detection signature on the set of pairs from which is it not drawing power.

The valid and non-valid detection signature regions are separated by guardbands. The guardbands for the V-I slope are the ranges 12KΩ to 23.75KΩ and 26.25KΩ to 45KΩ. A PD that presents a signature in a guard-band is non-compliant.

V-I slope is the effective resistance calculated from the two voltage/current measurements made during the detection process.

$$\text{V-I slope} = (V_2 - V_1)/(I_2 - I_1) \quad (33\text{–}1)$$

where (V_1, I_1) and (V_2, I_2) are measurements made at the PD PI.

The valid PD detection signature shall have the characteristics of Table 33–8.

Table 33–8—Valid PD detection signature characteristics, measured at PD input connector

Parameter	Conditions	Minimum	Maximum	Unit
V-I Slope (at any 1V or greater chord within the voltage range conditions)	2.7V to 10.1V	23.75	26.25	KΩ
V offset			1.9	V
I offset			10	μA
Input capacitance	2.7V to 10.1 V	0.05	0.12	μF
Input inductance	2.7V to 10.1 V		100	μH

A non-valid detection signature shall have one or both of the characteristics in Table 33–9

Table 33–9—Non-valid PD detection signature characteristics, measured at PD input connector

Parameter	Conditions	Range of values	Unit
V-I Slope	V < 10.1V	Either greater than 45 or less than 12	KΩ
Input Capacitance	V < 10.1V	Greater than 10	μF

IEEE 802.3af standard, 33.3.3, Table 33-8, and Table 33-9

42. Upon information and belief, discovery will show that each Accused PD Product has at least one path and the at least one path comprises at least two different impedances.

43. The DC current can comprise a first magnitude of DC current for a first interval followed by a second magnitude of DC current for a second interval, wherein the second magnitude is greater than the first magnitude. For example:

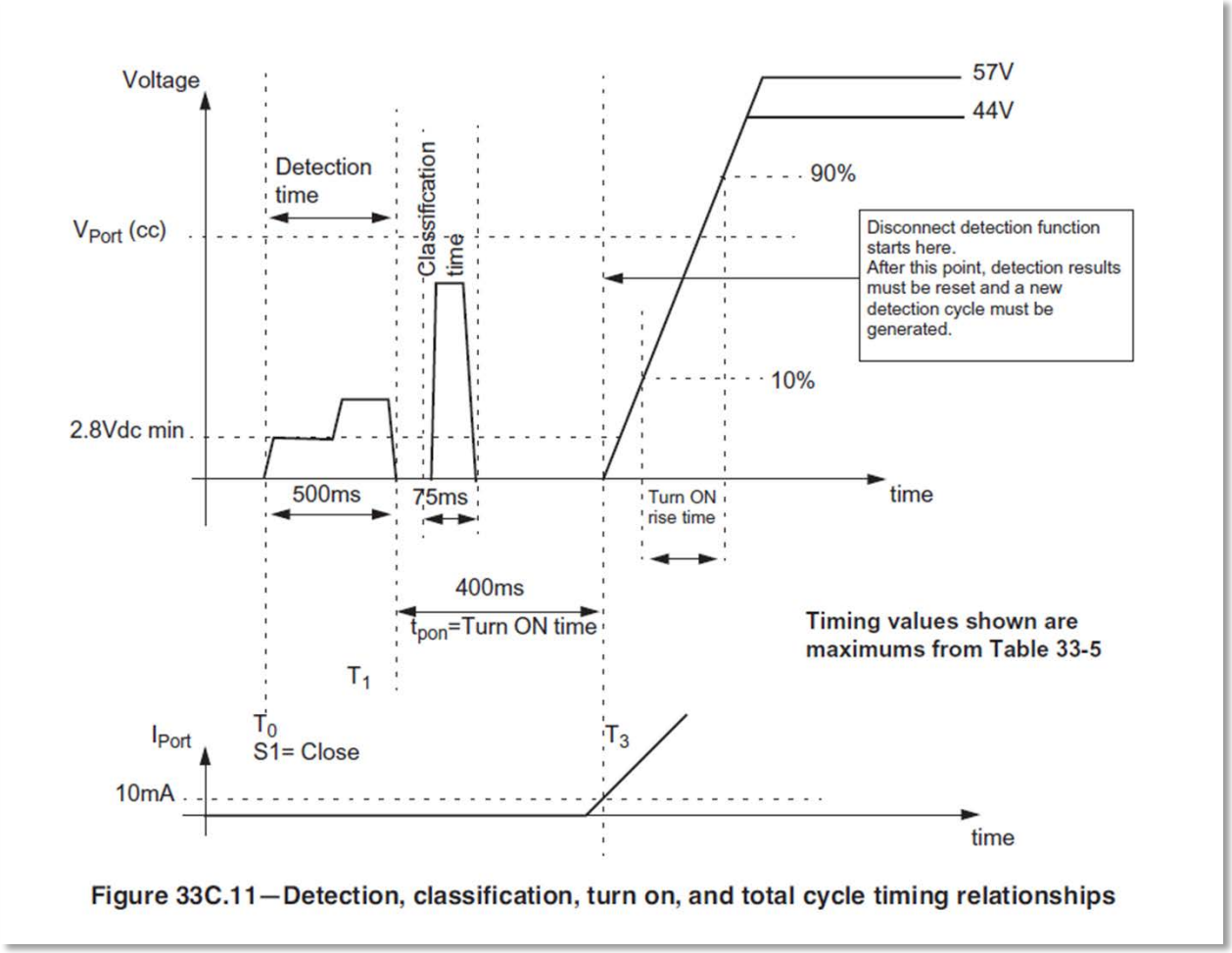


Figure 33C.11—Detection, classification, turn on, and total cycle timing relationships

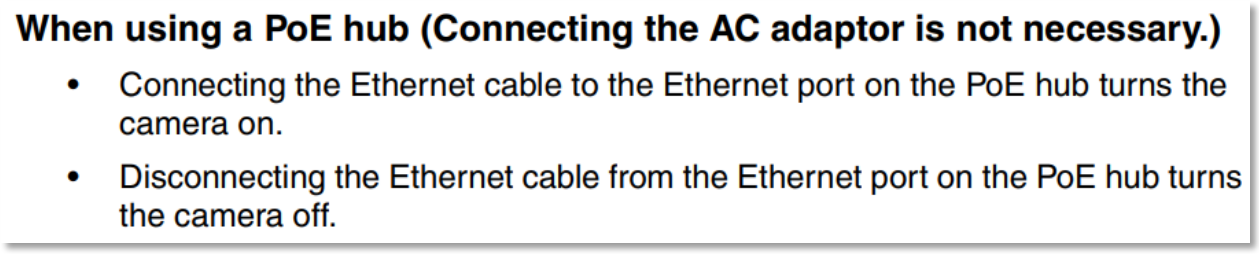
IEEE 802.3af standard, Figure 33C.11

44. The first and second magnitudes of DC current can generally be used, for example, to distinguish a PD like the Accused PD Products from a non-PD or legacy device, and to identify each Accused PD Product's power requirements.

45. Accordingly, Defendants have and continue to directly infringe the `107 Patent, both literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271(a) by making, using, offering for sale, selling, and/or importing into the United States the Accused Products without the authority of Chrimar.

46. Defendants have been on notice of the `107 Patent since at least filing of this Complaint. *See Script Sec. Sols. L.L.C. v. Amazon.com, Inc.*, 170 F. Supp. 3d 928, 937 (E.D. Tex. 2016).

47. In violation of 35 U.S.C. § 271(b), Defendants have indirectly infringed the `107 Patent by inducing their customers to directly infringe the `107 Patent, both literally and/or under the doctrine of equivalents, at least by providing their customers with instructions on using the Accused Products and by making, using, offering for sale, selling, and/or importing devices in the United States the Accused Products without the authority of Chrimar. For example:


When using a PoE hub (Connecting the AC adaptor is not necessary.)

- Connecting the Ethernet cable to the Ethernet port on the PoE hub turns the camera on.
- Disconnecting the Ethernet cable from the Ethernet port on the PoE hub turns the camera off.

http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, p. 10.

48. Upon information and belief, and in violation of 35 U.S.C. § 271(b), Defendants have indirectly infringed the `107 Patent by contribution knowing that the Accused Products would be combined with other components to infringe the `107 Patent and that the Accused Products have no substantial non-infringing use.

49. Unless enjoined by this Court, Defendants will continue to infringe the `107 Patent.

50. Because of Defendants' infringing activities, Chrimar has suffered damages and will continue to suffer damages in the future.

COUNT II
INFRINGEMENT OF U.S. PATENT NO. 9,812,825

51. Chrimar alleges and hereby incorporates by reference every allegation made in the foregoing paragraphs of this Complaint as if each were separately set forth herein.

52. The `825 Patent is presumed valid.

53. In violation of 35 U.S.C. § 271, Defendants have directly infringed and continue to directly infringe, both literally and/or under the doctrine of equivalents, the `825 Patent by making, using, offering for sale, selling, and/or importing the Accused PSE Products in the United States, including within this District, that infringe at least claims 5, 13, 15, 16, and 17 of the `825 Patent without the authority of Chrimar. In further violation of 35 U.S.C. § 271, Defendants have directly infringed and continue to directly infringe, both literally and/or under the doctrine of equivalents, the `825 Patent by making, using, offering for sale, selling, and/or importing the Accused PD Products in the United States, including within this District, that infringe at least claims 40, 45, 49, 50, and 64 of the `825 Patent without the authority of Chrimar.

54. The Accused PD Products are powered-off BaseT Ethernet devices prior to receiving their operational power and configured to be interrogated for a predetermined response via at least one direct current (DC) signal.

55. For example, each Accused PD Product has pairs of contacts of its Ethernet connector that are used to carry 10BaseT and/or 100BaseTX Ethernet communication signals. Additionally, each Accused PD Product implements Section 33.3.5.1 of the 802.3af standard, or a similar provision of another standard, which defines that a PD is powered off and shall "turn

on" when certain conditions are met. For example, the representative BB-HCM403A Network Camera manual states:

PoE*2 (Power over Ethernet) Compliant with a Power Receiving Device Integrated

The camera is compliant with PoE (IEEE 802.3af) standards, contains a power receiving device that enables it to receive power via an Ethernet cable, and supports PoE*2. This allows you to mount the camera even if there is no power

Power Consumption	PoE: (48 V, IEEE 802.3af-compliant Power over Ethernet): About 5.5 W

http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, pp. 2, 180.

56. Each Accused PD Product complies or is compatible with the portions of the IEEE 802.3af standard that prescribe the presentation of valid detection signatures by drawing different magnitudes of DC current flow in response to at least one electrical connection (e.g., a voltage or current) applied to contacts of an Ethernet connector described in the below excerpts:

33.3.3 PD valid and non-valid detection signatures

A PD shall present a valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will accept power via the PI, but is not powered via the PI.

A PD shall present a non-valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will not accept power via the PI.

When a PD becomes powered via the PI, it shall present a non-valid detection signature on the set of pairs from which is it not drawing power.

The valid and non-valid detection signature regions are separated by guardbands. The guardbands for the V-I slope are the ranges 12KΩ to 23.75KΩ and 26.25KΩ to 45KΩ. A PD that presents a signature in a guard-band is non-compliant.

V-I slope is the effective resistance calculated from the two voltage/current measurements made during the detection process.

$$\text{V-I slope} = (V_2 - V_1)/(I_2 - I_1) \qquad (33\text{–}1)$$

where (V_1, I_1) and (V_2, I_2) are measurements made at the PD PI.

The valid PD detection signature shall have the characteristics of Table 33–8.

Table 33–8—Valid PD detection signature characteristics, measured at PD input connector

Parameter	Conditions	Minimum	Maximum	Unit
V-I Slope (at any 1V or greater chord within the voltage range conditions)	2.7V to 10.1V	23.75	26.25	KΩ
V offset			1.9	V
I offset			10	μA
Input capacitance	2.7V to 10.1 V	0.05	0.12	μF
Input inductance	2.7V to 10.1 V		100	μH

A non-valid detection signature shall have one or both of the characteristics in Table 33–9

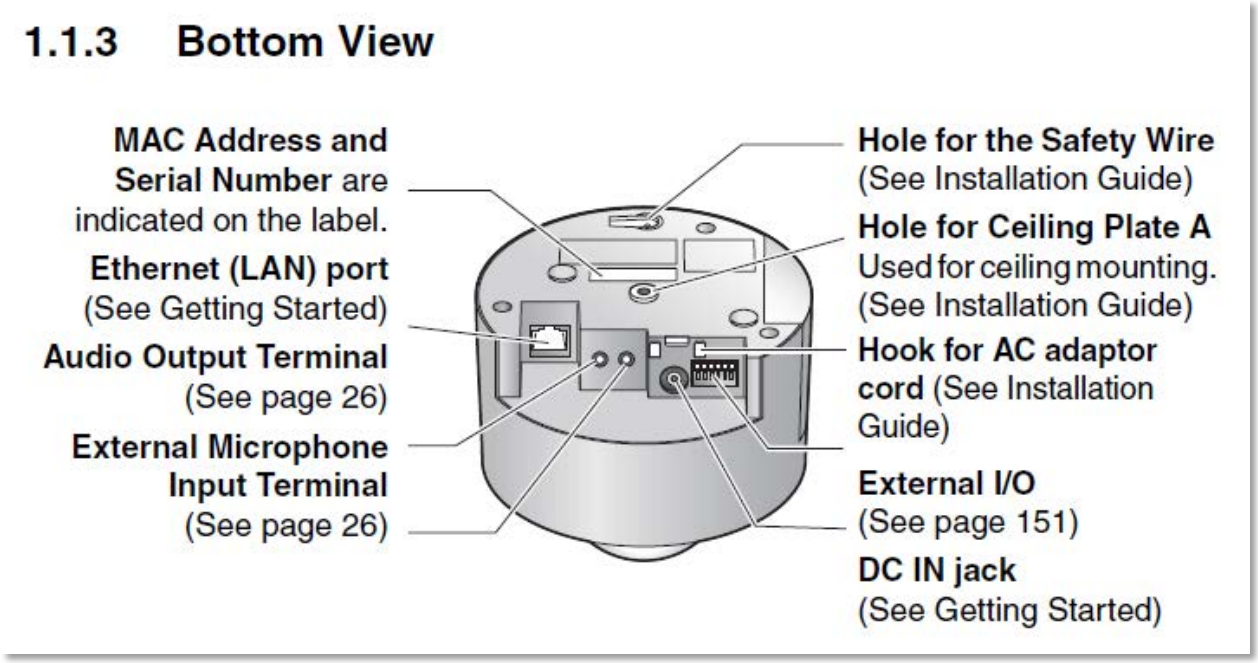
Table 33–9—Non-valid PD detection signature characteristics, measured at PD input connector

Parameter	Conditions	Range of values	Unit
V-I Slope	V < 10.1V	Either greater than 45 or less than 12	KΩ
Input Capacitance	V < 10.1V	Greater than 10	μF

IEEE 802.3af standard, Abstract, Table 33-8, and Table 33-9

57. Each Accused PD Products is a BaseT Ethernet device that comprises an Ethernet jack connector. The Ethernet jack connector comprises first and second pairs of contacts (1,2 & 3,6). Each of the first and second pairs are configured to carry BaseT Ethernet communication signals wherein the first pair of contacts consists of a transmit pair of the Ethernet jack connector and wherein the second pair of contacts consists of the receive pair of the Ethernet jack connector.

58. For example, the representative BB-HCM403A Network Camera has an RJ-45 connector with four pairs of contacts (labeled “Ethernet (LAN) port” in the following figure):



http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, p. 9.

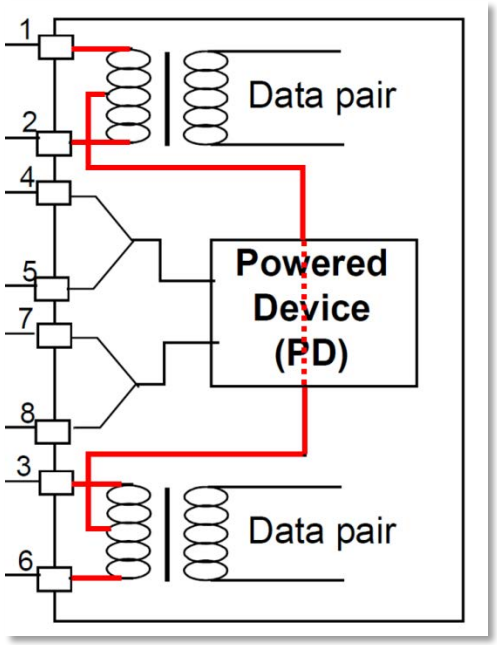
59. Each Accused PD Product is a BaseT Ethernet device that comprises at least one path. The at least one path is for the purpose of drawing at least one direct current (DC) signal. The at least one path is coupled across at least one of the contacts of the first pair (1,2) and at least one of the contacts of the second pair (3,6) of the Ethernet jack connector.

60. For example, because each of the Accused PD Products comply with the PoE Standards, each "shall be capable of accepting power on either of two sets of PI conductors (1,2 & 3,6 or 4,5 & 7,8). The two conductor sets are named Mode A and Mode B. In each four-wire connection, the two wires associated with a pair are at the same nominal average voltage. Figure 33–5 in conjunction with Table 33–7 illustrates the two power modes." IEEE 802.3af standard, p. 49.

Table 33–7—PD pinout

Conductor	Mode A	Mode B
1	Positive V_{Port}, Negative V_{Port}	
2	Positive V_{Port}, Negative V_{Port}	
3	Negative V_{Port}, Positive V_{Port}	
4		Positive V_{Port}, Negative V_{Port}
5		Positive V_{Port}, Negative V_{Port}
6	Negative V_{Port}, Positive V_{Port}	
7		Negative V_{Port}, Positive V_{Port}
8		Negative V_{Port}, Positive V_{Port}

IEEE 802.3af standard, Table 33-7. *See also, e.g.*, 802.3af Standard, p. 30, Figure 33-4 showing examples of PDs (referred to as Powered End Stations with respect to Figure 33-4) having paths coupled across the contacts of the Ethernet connector to be used for detection and classification. Because each Accused PD Product claims IEEE 802.3af/at compliance or compatibility, each has at least one path coupled across the contacts of the Ethernet connector as shown in the simplified example below.



IEEE 802.3af standard, Figure 33-4 (annotated, emphasis added)

61. Each Accused PD Product implements detection and classification protocols requiring at least one path for the purpose of drawing DC current, the at least one path coupled across at least one of the contacts of the first pair of contacts of the Ethernet connector and at least one of the contacts of the second pair of contacts of the Ethernet connector as explained in the 802.3af standard:

33.3.3 PD valid and non-valid detection signatures

A PD shall present a valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will accept power via the PI, but is not powered via the PI.

A PD shall present a non-valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will not accept power via the PI.

When a PD becomes powered via the PI, it shall present a non-valid detection signature on the set of pairs from which is it not drawing power.

The valid and non-valid detection signature regions are separated by guardbands. The guardbands for the V-I slope are the ranges 12KΩ to 23.75KΩ and 26.25KΩ to 45KΩ. A PD that presents a signature in a guard-band is non-compliant.

V-I slope is the effective resistance calculated from the two voltage/current measurements made during the detection process.

$$\text{V-I slope} = (V_2 - V_1)/(I_2 - I_1) \qquad (33\text{–}1)$$

where (V_1, I_1) and (V_2, I_2) are measurements made at the PD PI.

The valid PD detection signature shall have the characteristics of Table 33–8.

IEEE 802.3af standard, 33.3.3

62. The Accused PD Products are powered-off BaseT Ethernet devices prior to receiving their operational power and configured to receive or return at least one direct current (DC) signal via at least one of the contacts of the first pair and configured to return or receive the at least one direct current (DC) signal via at least one of the contacts of the second pair of the Ethernet connector. The predetermined response is carried by at least two different magnitudes in the flow of the at least one direct current (DC) signal.

63. For example, the below excerpts of the PoE Standards demonstrate that a compliant product, such as the Accused PD Products, will draw different magnitudes of DC current flow in response to at least one electrical connection applied to a contact, as required to comply with the detection and classification protocols.

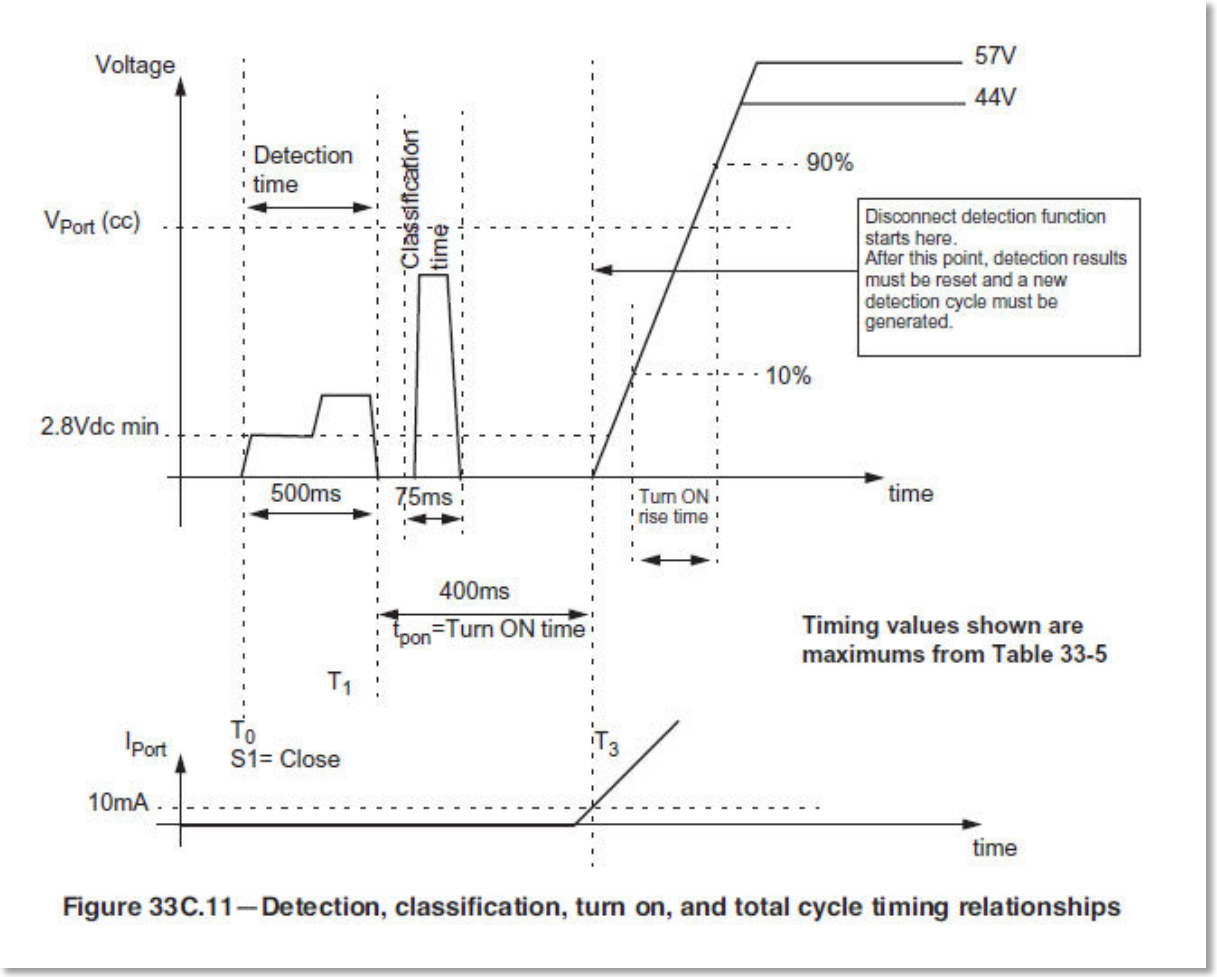
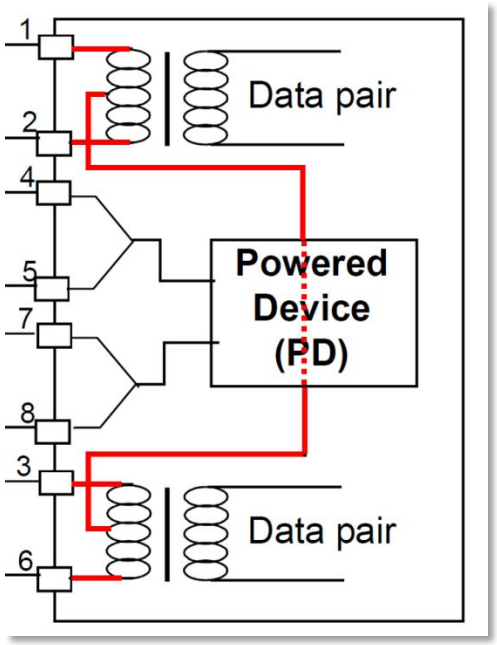


Figure 33C.11—Detection, classification, turn on, and total cycle timing relationships

IEEE 802.3af standard, Figure 33C.11 This signature impedance is within the at least one path and distinguishes an Accused PD Product from non-PoE Ethernet devices.

64. Each of the Accused PD Products is a powered-off BaseT Ethernet device prior to receiving its operational power wherein the at least one path is physically coupled across at least one of the contacts of the first pair of contacts and at least one of the contacts of the second pair of contacts of the Ethernet jack connector.

65. For example, because each Accused PD Product is 802.3af/at compliant or compatible, each has at least one path coupled across the contacts of the Ethernet connector as shown in the simplified example below.



IEEE 802.3af standard, Figure 33-4 (annotated, emphasis added)

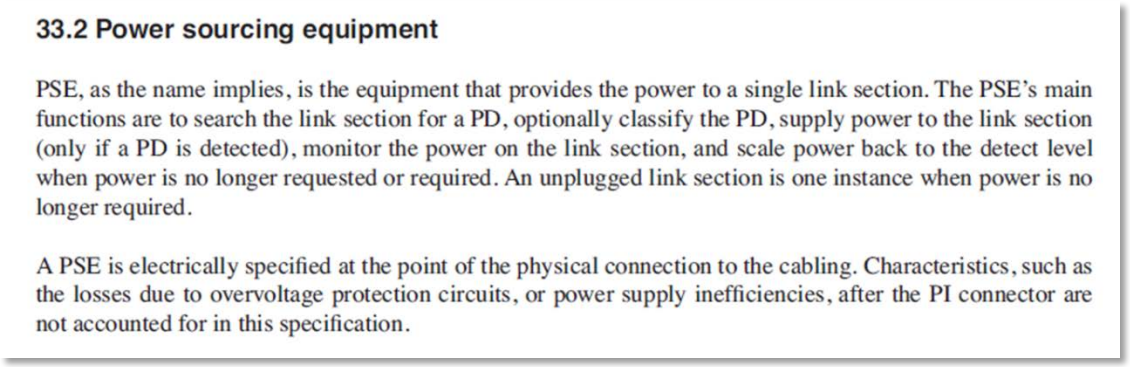
66. Each of the Accused PD Products comprises a controller coupled across at least one of the contacts of the first pair of contacts and at least one of the contacts of the second pair of contacts of the Ethernet jack connector.

67. For example, each of the Accused PD Products employs a controller coupled across the recited contacts as described above.

68. Upon information and belief, discovery will show that each of the Accused PD Products has firmware for the controller described above.

69. Each of the Accused PSE Products is a piece of BaseT Ethernet equipment configured to interrogate for predetermined response via at least one direct current (DC) signal.

70. For example, each Accused PSE Product searches the Ethernet data link for PDs as required by 802.3af:



33.2 Power sourcing equipment

PSE, as the name implies, is the equipment that provides the power to a single link section. The PSE's main functions are to search the link section for a PD, optionally classify the PD, supply power to the link section (only if a PD is detected), monitor the power on the link section, and scale power back to the detect level when power is no longer requested or required. An unplugged link section is one instance when power is no longer required.

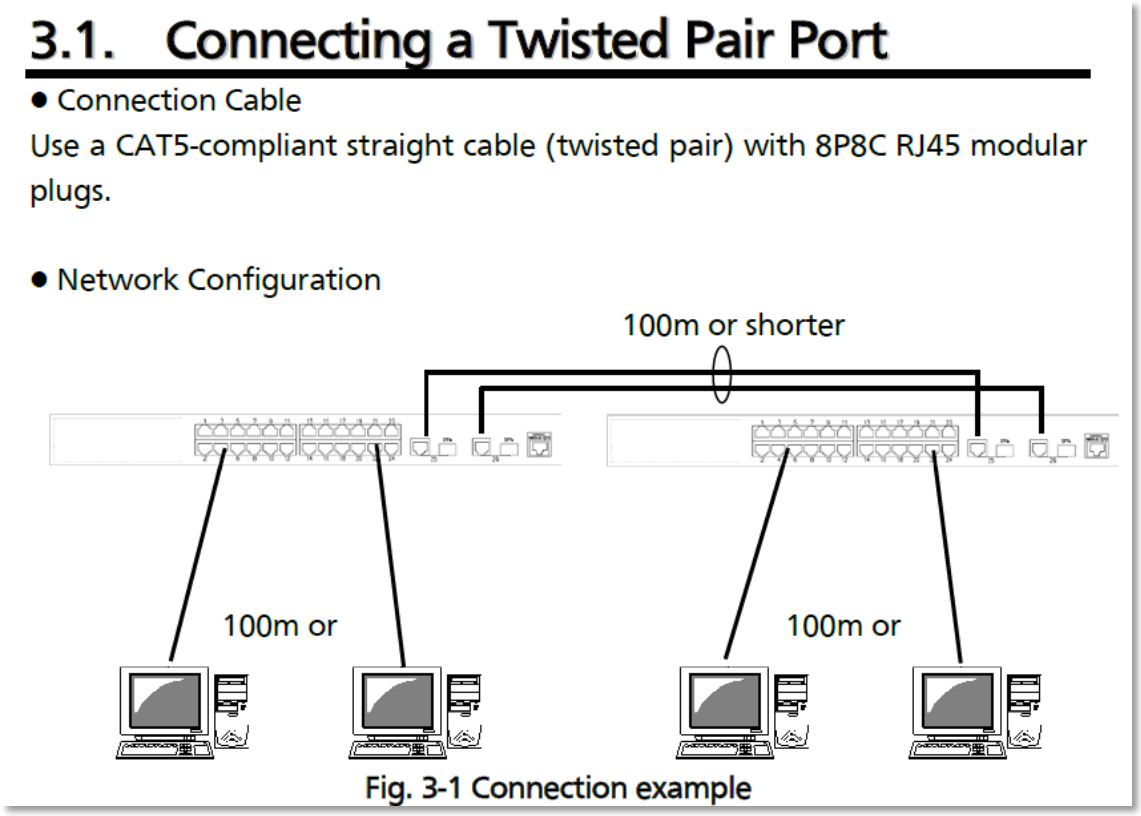
A PSE is electrically specified at the point of the physical connection to the cabling. Characteristics, such as the losses due to overvoltage protection circuits, or power supply inefficiencies, after the PI connector are not accounted for in this specification.

IEEE 802.3af Standard, 33.2.

71. Each Accused PSE Product has an Ethernet jack connector of the BaseT Ethernet device. The Ethernet jack connector comprising first and second pairs of contacts, each of the first and second pairs configured to carry BaseT Ethernet communication signals wherein the first pair of contacts consists of a transmit pair of the Ethernet jack connector and wherein the second pair of contacts consists of a receive pair of the Ethernet jack connector.

72. For example, the following representative devices have RJ-45 connectors having four pairs of contacts:

73. The representative Switch-M24PWR Ethernet Switching Hub is shown as having RJ45 modular jacks used to connect to a PD or non-PoE end device via a connection cable employing modular plugs at each end:



Switch-M24PWR Operation Manual, p. 16.

74. Each Accused Ethernet PSE Product has at least one direct current (DC) supply coupled to at least one of the contacts of the first pair of contacts and at least one of the contacts of the second pair of contacts of the Ethernet jack connector.

75. For example, the representative Switch-M24PWR Ethernet Switching Hub's manual states "Ports 1 to 24 support IEEE802.3af compatible PoE power supply function." Switch-M24PWR Operation Manual, p. 11. An IEEE 802.3af compliant Accused PSE Product must also include a DC supply in order to perform detection, classification, and control of the provision of operational power to a PD:

33.2 Power sourcing equipment

PSE, as the name implies, is the equipment that provides the power to a single link section. The PSE's main functions are to search the link section for a PD, optionally classify the PD, supply power to the link section (only if a PD is detected), monitor the power on the link section, and scale power back to the detect level when power is no longer requested or required. An unplugged link section is one instance when power is no longer required.

A PSE is electrically specified at the point of the physical connection to the cabling. Characteristics, such as the losses due to overvoltage protection circuits, or power supply inefficiencies, after the PI connector are not accounted for in this specification.

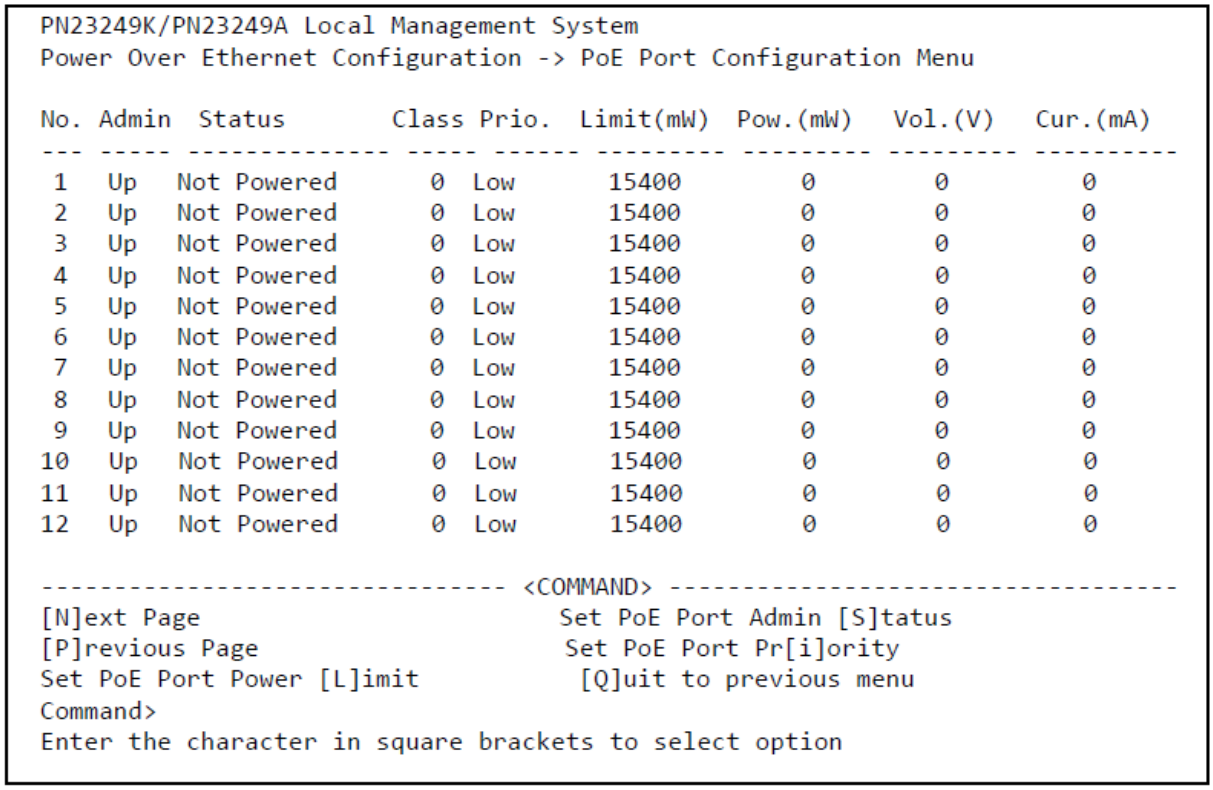
Table 33–5—PSE output PI electrical requirements for all PD classes, unless otherwise specified

Item	Parameter	Symbol	Unit	Min	Max	Additional information
1	Output voltage	V_{Port}	Vdc	44	57	See 33.2.8.1
2	Load regulation		V	44	57	See 33.2.8.2
3	Power feeding ripple and noise:					
	f < 500Hz		V_{pp}		0.5	See 33.2.8.3
	500Hz to 150kHz		V_{pp}		0.2	
	150KHz to 500KHz		V_{pp}		0.15	
	500KHz to 1MHz		V_{pp}		0.1	
4	Maximum output current in normal powering mode at PSE min output voltage	I_{Port_max}	mAdc	350		See 33.2.8.4

IEEE 802.3af standard, 33.2, Table 33-5.

76. Each Accused PSE Device is configured to provide or receive at least one direct current (DC) signal via at least one of the contacts of the first pair and configured to receive or provide the at least one direct current (DC) signal via at least one of the contacts of the second pair of an Ethernet connector, the predetermined response carried by at least two different magnitudes in the flow of the at least one direct current (DC) signal.

77. For example, each of the Accused PSE products use the magnitude in the flow of the current through the loop to interrogate the piece of BaseT Ethernet terminal Equipment. For example, the representative Switch-M24PWR Operation Manual explains:



```
PN23249K/PN23249A Local Management System
Power Over Ethernet Configuration -> PoE Port Configuration Menu

No. Admin  Status        Class Prio.  Limit(mW)  Pow.(mW)   Vol.(V)   Cur.(mA)
--- ----- -------------- ----- ------ --------- --------- --------- ----------
 1   Up   Not Powered       0  Low       15400         0         0          0
 2   Up   Not Powered       0  Low       15400         0         0          0
 3   Up   Not Powered       0  Low       15400         0         0          0
 4   Up   Not Powered       0  Low       15400         0         0          0
 5   Up   Not Powered       0  Low       15400         0         0          0
 6   Up   Not Powered       0  Low       15400         0         0          0
 7   Up   Not Powered       0  Low       15400         0         0          0
 8   Up   Not Powered       0  Low       15400         0         0          0
 9   Up   Not Powered       0  Low       15400         0         0          0
10   Up   Not Powered       0  Low       15400         0         0          0
11   Up   Not Powered       0  Low       15400         0         0          0
12   Up   Not Powered       0  Low       15400         0         0          0

-------------------------------- <COMMAND> ----------------------------------
[N]ext Page                          Set PoE Port Admin [S]tatus
[P]revious Page                      Set PoE Port Pr[i]ority
Set PoE Port Power [L]imit            [Q]uit to previous menu
Command>
Enter the character in square brackets to select option
```

Fig. 4-7-59 PoE Port Configuration Menu

Screen Description

Admin:	Displays whether or not power supply is possible.	
	Up	Displays that power supply is possible.
	Down	Displays that power supply is not possible.
Status:	Show the power supply status.	
	Powered	Displays that power is supplied.
	Not Powered	Displays that power is not supplied.
	Overload	Displays that power exceeding the limit is supplied.
Class	Displays the class selected by the classification function.	
Prio.	Displays the power supply priority.	
	Crit.	Displays that top priority is given.
	High	Displays that priority second to Crit. is given.
	Low	Displays that the lowest priority is given.
Limit	Displays the upper limit of power supply amount. (in units of 200 mW)	
Pow.	Displays the amount of power supply. (in units of 100 mW)	
Vol.	Displays the voltage.	
Cur.	Displays the current.	

Switch-M24PWR Operation Manual, p. 187.

78. The Accused PSE Products detect the different magnitudes of DC current flow in response to at least one electrical connection applied to contacts of an Ethernet connector, as required to comply with the detection and classification protocols as illustrated here:

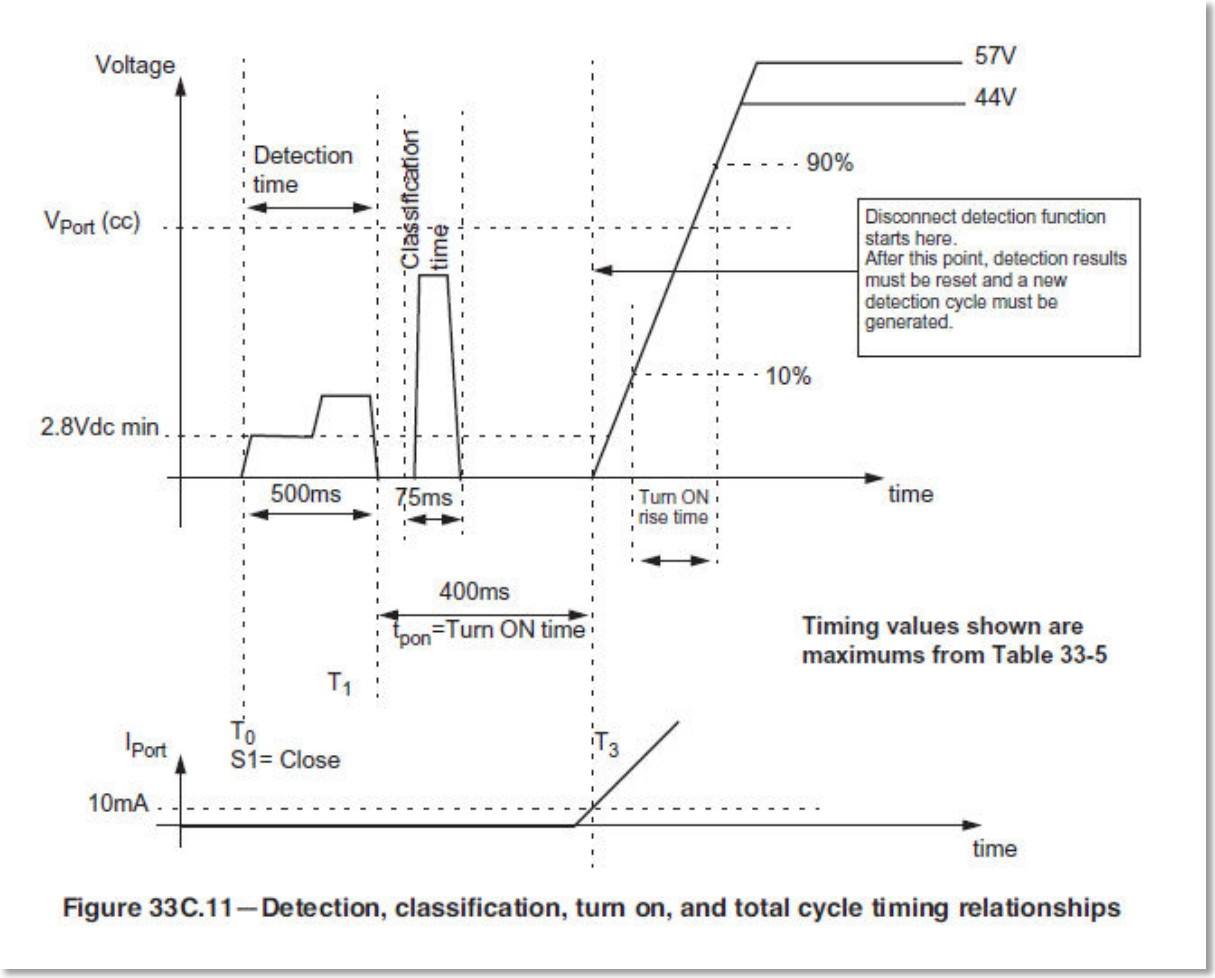


Figure 33C.11—Detection, classification, turn on, and total cycle timing relationships

IEEE 802.3af standard, Figure 33C.11 This signature impedance is within the at least one path and distinguishes a PD device from a non-PoE Ethernet device.

79. Each of the Accused PSE Products comprise a controller coupled across at least one of the contacts of the first pair of contacts and at least one of the contacts of the second pair of contacts of the Ethernet jack connector.

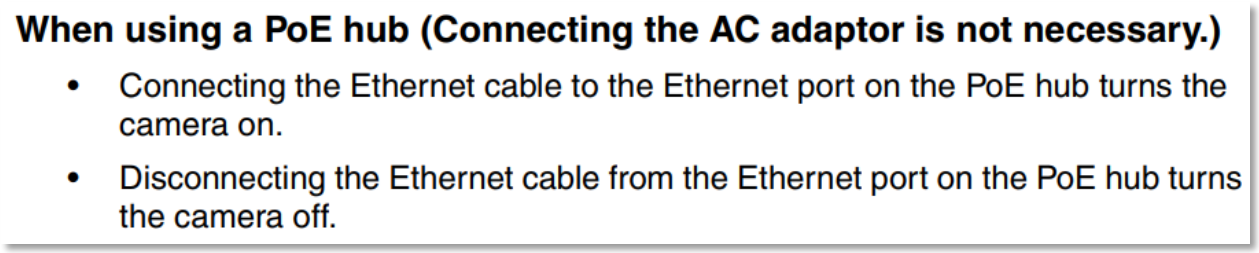
80. For example, in order for the Accused PSE Products to detect the different magnitudes of DC current flow as described above, the Accused PSE Devices necessarily have a controller coupled to the recited contacts to perform the detection.

81. Upon information and belief, discovery will show that each of the Accused PSE Products has firmware for the controller described in paragraphs 77-78.

82. Accordingly, Defendants have and continue to directly infringe the `825 Patent, both literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271(a) by making, using, offering for sale, selling, and/or importing into the United States the Accused Products without the authority of Chrimar.

83. Defendants have been on notice of the `825 Patent since at least the filing of this Complaint. *See Script Sec. Sols. L.L.C. v. Amazon.com, Inc.*, 170 F. Supp. 3d 928, 937 (E.D. Tex. 2016).

84. In violation of 35 U.S.C. § 271(b), Defendants have indirectly infringed the `825 Patent by inducing their customers to directly infringe the `825 Patent, both literally and/or under the doctrine of equivalents, at least by providing their customers with instructions on using the Accused Products and by making, using, offering for sale, selling, and/or importing devices in the United States the Accused Products without the authority of Chrimar. For example:


When using a PoE hub (Connecting the AC adaptor is not necessary.)

- Connecting the Ethernet cable to the Ethernet port on the PoE hub turns the camera on.
- Disconnecting the Ethernet cable from the Ethernet port on the PoE hub turns the camera off.

http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, p. 10.

85. Upon information and belief, and in violation of 35 U.S.C. § 271(b), Defendants have indirectly infringed the `825 Patent by contribution knowing that the Accused Products

would be combined with other components to infringe the `825 Patent and that the Accused Products have no substantial non-infringing use.

86. Unless enjoined by this Court, Defendants will continue to infringe the `825 Patent.

87. Because of Defendants' infringing activities, Chrimar has suffered damages and will continue to suffer damages in the future.

COUNT III
INFRINGEMENT OF U.S. PATENT NO. 8,902,760

88. Chrimar alleges and hereby incorporates by reference every allegation made in the foregoing paragraphs of this Complaint as if each were separately set forth herein.

89. In violation of 35 U.S.C. § 271, Defendants have directly infringed and continue to directly infringe, both literally and/or under the doctrine of equivalents, the `760 Patent by making, using, offering for sale, selling, and/or importing the Accused Products in the United States, including within this District, that infringe at least claims 166, 177, and claim 219 across claims 158, 179, and 182 of the `760 Patent without the authority of Chrimar.

90. The identified claims of the `760 Patent are presumed valid.

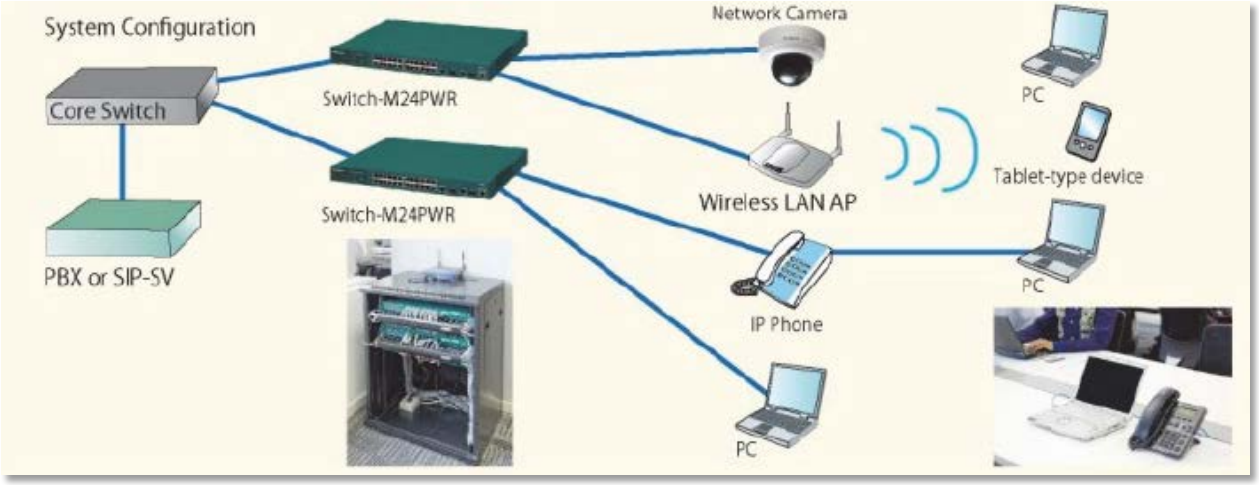
91. Each of the Accused PD Products is a piece of BaseT Ethernet terminal equipment. For example, the BB-HCM403A Network Camera is a piece of BaseT Ethernet terminal equipment.

https://security.panasonic.com/products/bb-hcm403/

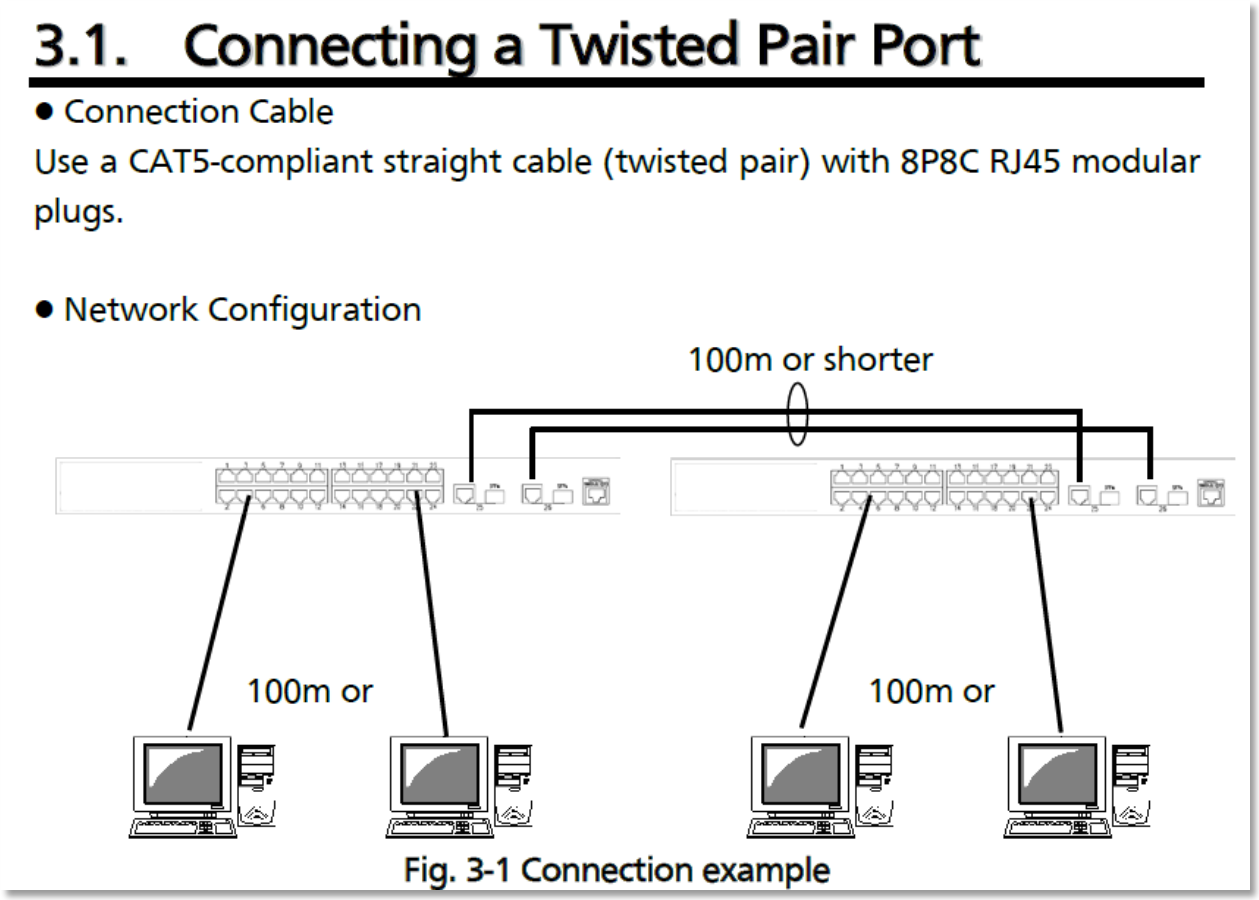
92. Each of the Accused PSE Products is a piece of central network equipment. For example, the Switch-M24PWR Ethernet Switching Hub is a piece of central network equipment.

93. The Accused Products comprise a BaseT Ethernet system where Ethernet cabling can physically connect a piece of BaseT Ethernet terminal equipment to a piece of central

network equipment. For example, the BB-HCM403A Network Camera can be physically connected to the Switch-M24PWR Ethernet Switching Hub with an Ethernet cable.

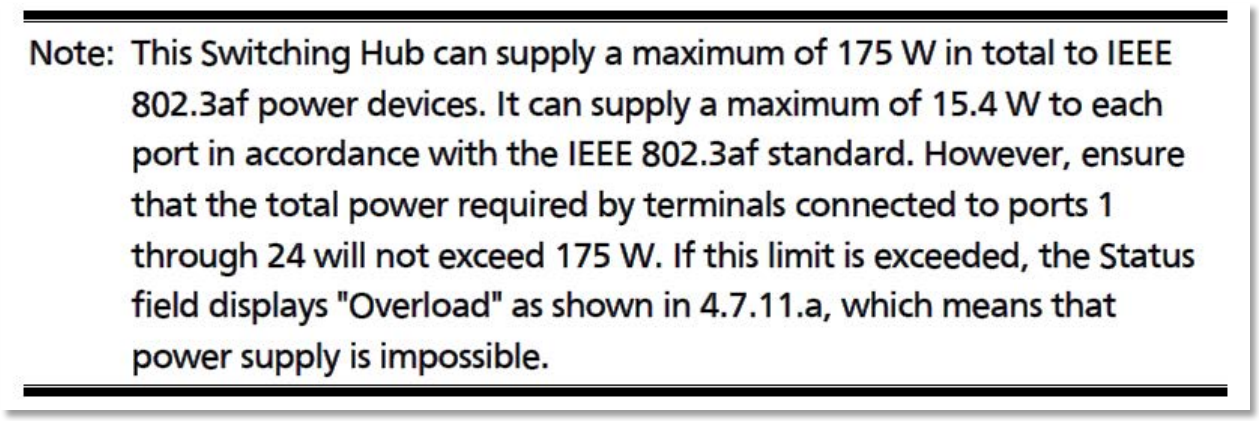


94. The Ethernet cabling has at least first and second pairs of conductors used to carry BaseT Ethernet communication signals, and the first and second pairs of conductors can physically connect between a piece of BaseT Ethernet terminal equipment and a piece of central network equipment:



Switch-M24PWR Operation Manual, p. 16.

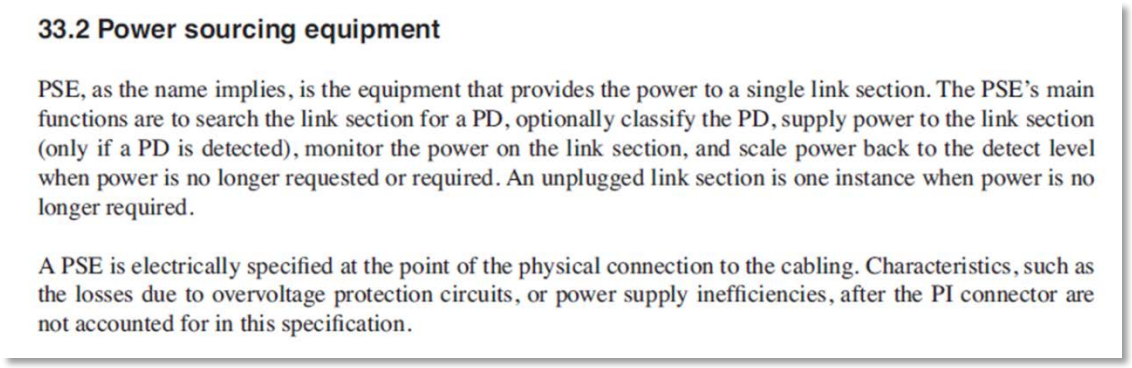
95. Each of the Accused PSE Products has at least one DC supply to provide at least one DC condition across at least one of the conductors of the first pair of contacts and at least one of the contacts of the second pairs of contacts of an Ethernet connector. For example, the Switch-M24PWR claims compliance with the IEEE 802.3af standard:



Note: This Switching Hub can supply a maximum of 175 W in total to IEEE 802.3af power devices. It can supply a maximum of 15.4 W to each port in accordance with the IEEE 802.3af standard. However, ensure that the total power required by terminals connected to ports 1 through 24 will not exceed 175 W. If this limit is exceeded, the Status field displays "Overload" as shown in 4.7.11.a, which means that power supply is impossible.

Switch-M24PWR Operation Manual, p. 186.

96. An IEEE 802.3af compliant Accused PSE Product must also include a DC supply in order to perform detection, classification, and control of the provision of operational power to a PD:



33.2 Power sourcing equipment

PSE, as the name implies, is the equipment that provides the power to a single link section. The PSE's main functions are to search the link section for a PD, optionally classify the PD, supply power to the link section (only if a PD is detected), monitor the power on the link section, and scale power back to the detect level when power is no longer requested or required. An unplugged link section is one instance when power is no longer required.

A PSE is electrically specified at the point of the physical connection to the cabling. Characteristics, such as the losses due to overvoltage protection circuits, or power supply inefficiencies, after the PI connector are not accounted for in this specification.

Table 33–5—PSE output PI electrical requirements for all PD classes, unless otherwise specified

Item	Parameter	Symbol	Unit	Min	Max	Additional information
1	Output voltage	V_{Port}	Vdc	44	57	See 33.2.8.1
2	Load regulation		V	44	57	See 33.2.8.2
3	Power feeding ripple and noise:					
	f < 500Hz		V_{pp}		0.5	See 33.2.8.3
	500Hz to 150kHz		V_{pp}		0.2	
	150KHz to 500KHz		V_{pp}		0.15	
	500KHz to 1MHz		V_{pp}		0.1	
4	Maximum output current in normal powering mode at PSE min output voltage	I_{Port_max}	mAdc	350		See 33.2.8.4

IEEE 802.3af standard, 33.2, Table 33-5

97. Each of the Accused PD Products has at least one path to change impedance within a loop formed over the at least one of the contacts of the first pair of contacts and the at least one of the contacts of the second pair of contacts of the Ethernet connector by changing impedance within the at least one path in response to the at least one DC condition across the at least one path. For example, the BB-HCM403A Network Camera claims compliance with the IEEE 802.3af standard:

PoE*2 (Power over Ethernet) Compliant with a Power Receiving Device Integrated

The camera is compliant with PoE (IEEE 802.3af) standards, contains a power receiving device that enables it to receive power via an Ethernet cable, and supports PoE*2. This allows you to mount the camera even if there is no power

Power Consumption	PoE: (48 V, IEEE 802.3af-compliant Power over Ethernet): About 5.5 W

http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, pp. 2, 180.

98. IEEE 802.3af explains:

33.3.3 PD valid and non-valid detection signatures

A PD shall present a valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will accept power via the PI, but is not powered via the PI.

A PD shall present a non-valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will not accept power via the PI.

When a PD becomes powered via the PI, it shall present a non-valid detection signature on the set of pairs from which is it not drawing power.

The valid and non-valid detection signature regions are separated by guardbands. The guardbands for the V-I slope are the ranges 12KΩ to 23.75KΩ and 26.25KΩ to 45KΩ. A PD that presents a signature in a guard-band is non-compliant.

V-I slope is the effective resistance calculated from the two voltage/current measurements made during the detection process.

$$\text{V-I slope} = (V_2 - V_1)/(I_2 - I_1) \qquad (33\text{–}1)$$

where (V_1, I_1) and (V_2, I_2) are measurements made at the PD PI.

The valid PD detection signature shall have the characteristics of Table 33–8.

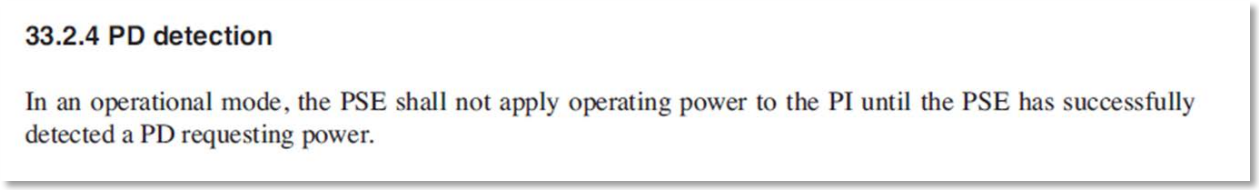
IEEE 802.3af standard, 33.3.3

99. Upon information and belief, discovery will show that the at least one path is integrated into each of the Accused PD Products.

100. Each of the Accused PD Products is a powered-off end device prior to receiving its operational power. For example, the BB-HCM403A Network Camera is a powered-off end device when requesting power or when it is not connected to the network.

101. Each of the Accused PSE Products can detect at least one impedance condition within the loop with the piece of BaseT Ethernet terminal equipment powered-off. For example, the BB-HCM403A Network Camera claims compliance with the IEEE 802.3af standard. *See* http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, pp. 2, 180.

102. IEEE 802.3af explains:

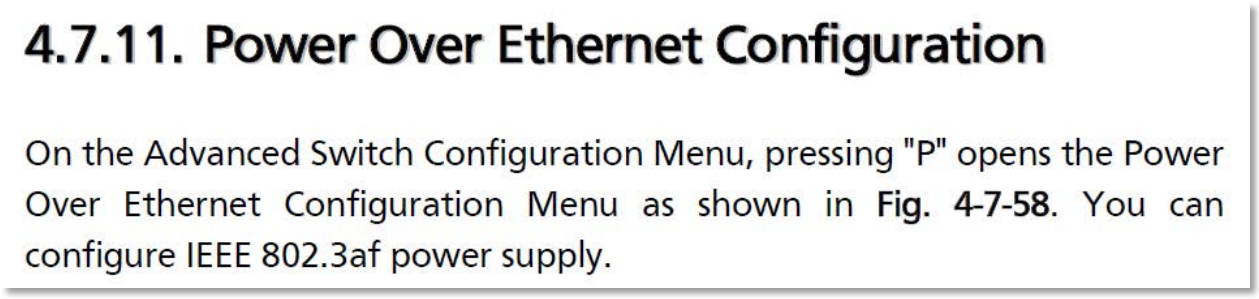


33.2.4 PD detection

In an operational mode, the PSE shall not apply operating power to the PI until the PSE has successfully detected a PD requesting power.

IEEE 802.3af standard, 33.2.4

103. Each of the Accused PSE Products has an integrated DC power source. For example, the Switch-M24PWR Operation Manual explains:



4.7.11. Power Over Ethernet Configuration

On the Advanced Switch Configuration Menu, pressing "P" opens the Power Over Ethernet Configuration Menu as shown in **Fig. 4-7-58**. You can configure IEEE 802.3af power supply.

Switch-M24PWR Operation Manual, p. 186

104. Each of the Accused PSE Products uses the magnitude in the flow of current through the loop to interrogate the piece of BaseT Ethernet terminal Equipment. For example, the Switch-M24PWR Operation Manual explains:

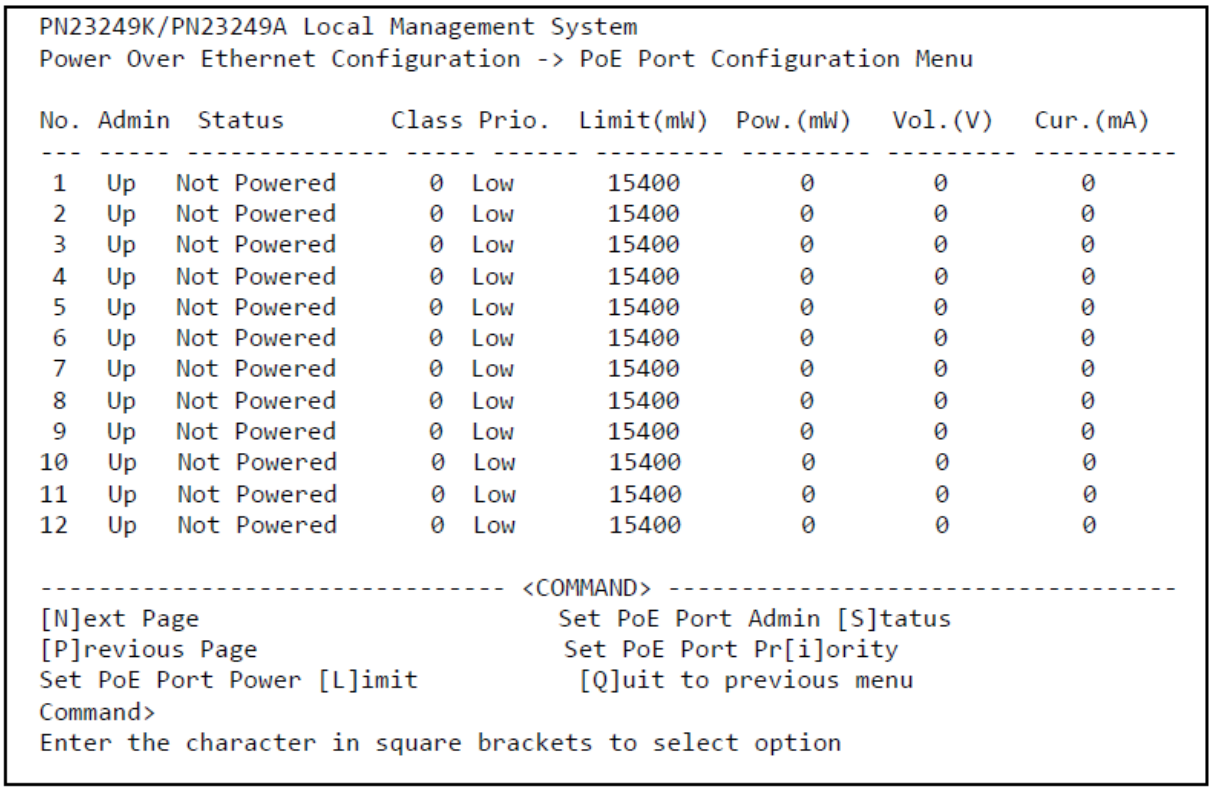


Fig. 4-7-59 PoE Port Configuration Menu

Screen Description

Admin:	Displays whether or not power supply is possible.	
	Up	Displays that power supply is possible.
	Down	Displays that power supply is not possible.
Status:	Show the power supply status.	
	Powered	Displays that power is supplied.
	Not Powered	Displays that power is not supplied.
	Overload	Displays that power exceeding the limit is supplied.
Class	Displays the class selected by the classification function.	
Prio.	Displays the power supply priority.	
	Crit.	Displays that top priority is given.
	High	Displays that priority second to Crit. is given.
	Low	Displays that the lowest priority is given.
Limit	Displays the upper limit of power supply amount. (in units of 200 mW)	
Pow.	Displays the amount of power supply. (in units of 100 mW)	
Vol.	Displays the voltage.	
Cur.	Displays the current.	

Switch-M24PWR Operation Manual, p. 187

105. Each of the Accused PD Products relates information about itself to at least one impedance condition within the at least one path. For example, each of the Accused PD Products relates its power class to an impedance signature within at least one path and during classification conveys that information via different magnitudes of DC current in response to an electrical condition applied to at least one of the contacts of its Ethernet connector. The BB-HCM403A Network Camera, for example, claims compliance with the IEEE 802.3af standard. *See* http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, p. 2. IEEE 802.3af explains:

33.3.3 PD valid and non-valid detection signatures

A PD shall present a valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will accept power via the PI, but is not powered via the PI.

A PD shall present a non-valid detection signature at the PI between Positive V_{Port} and Negative V_{Port} of PD Mode A and between Positive V_{Port} and Negative V_{Port} of PD Mode B as defined in 33.3.1 while it is in a state where it will not accept power via the PI.

When a PD becomes powered via the PI, it shall present a non-valid detection signature on the set of pairs from which is it not drawing power.

The valid and non-valid detection signature regions are separated by guardbands. The guardbands for the V-I slope are the ranges 12KΩ to 23.75KΩ and 26.25KΩ to 45KΩ. A PD that presents a signature in a guard-band is non-compliant.

V-I slope is the effective resistance calculated from the two voltage/current measurements made during the detection process.

$$\text{V-I slope} = (V_2 - V_1)/(I_2 - I_1) \qquad (33\text{–}1)$$

where (V_1, I_1) and (V_2, I_2) are measurements made at the PD PI.

The valid PD detection signature shall have the characteristics of Table 33–8.

IEEE 802.3af standard, 33.3.3

106. The information can generally be used, for example, to distinguish a PD like the Accused PD Products from a non-PD or legacy device, and/or to identify each Accused PD Product's power requirements or class.

107. Accordingly, Defendants have and continue to directly infringe the `760 Patent, both literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271(a) by making, using, offering for sale, selling, and/or importing into the United States the Accused Products without the authority of Chrimar.

108. Defendants have been on notice of the `760 Patent since at least filing of this Complaint. *See Script Sec. Sols. L.L.C. v. Amazon.com, Inc.*, 170 F. Supp. 3d 928, 937 (E.D. Tex. 2016).

109. In violation of 35 U.S.C. § 271(b), Defendants have indirectly infringed the `760 Patent by inducing their customers to directly infringe the `760 Patent, both literally and/or under the doctrine of equivalents, at least by providing their customers with instructions on using the Accused Products and by making, using, offering for sale, selling, and/or importing devices in the United States the Accused Products without the authority of Chrimar. For example:

- When viewing video (Motion JPEG), we recommend using an Ethernet switching hub instead of a repeater hub to prevent degradation in video display.

http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, p. 28

110. Upon information and belief, and in violation of 35 U.S.C. § 271(b), Defendants have indirectly infringed the `760 Patent by contribution knowing that the Accused Products would be combined with other components to infringe the `760 Patent and that the Accused Products have no substantial non-infringing use.

111. Unless enjoined by this Court, Defendants will continue to infringe the `760 Patent.

112. Because of Defendants' infringing activities, Chrimar has suffered damages and will continue to suffer damages in the future.

COUNT IV
INFRINGEMENT OF U.S. PATENT NO. 9,019,838

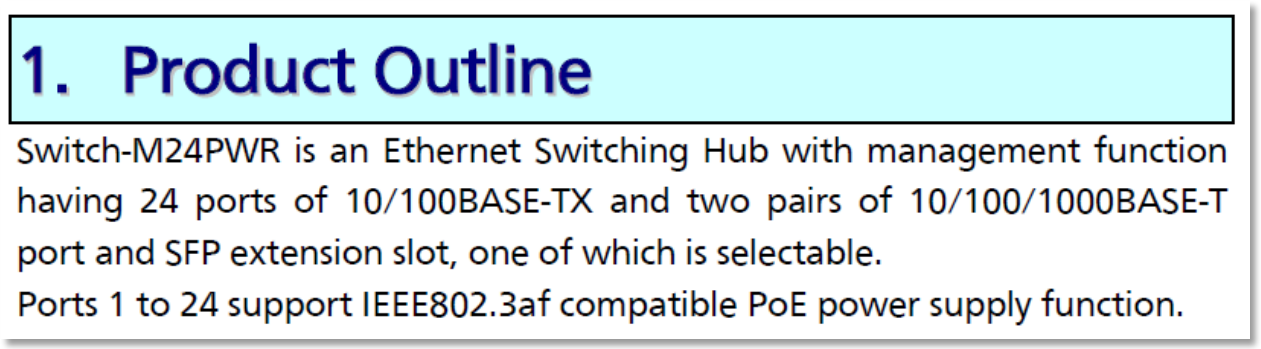
113. Chrimar alleges and hereby incorporates by reference every allegation made in the foregoing paragraphs of this Complaint as if each were separately set forth herein.

114. In violation of 35 U.S.C. § 271, Defendants have directly infringed and continue to directly infringe, both literally and/or under the doctrine of equivalents, the `838 Patent by making, using, offering for sale, selling, and/or importing the Accused PSE Products in the United States, including within this District, that infringe at least claims 6 and 76 of the `838 Patent without the authority of Chrimar.

115. The identified claims of the `838 Patent are presumed valid.

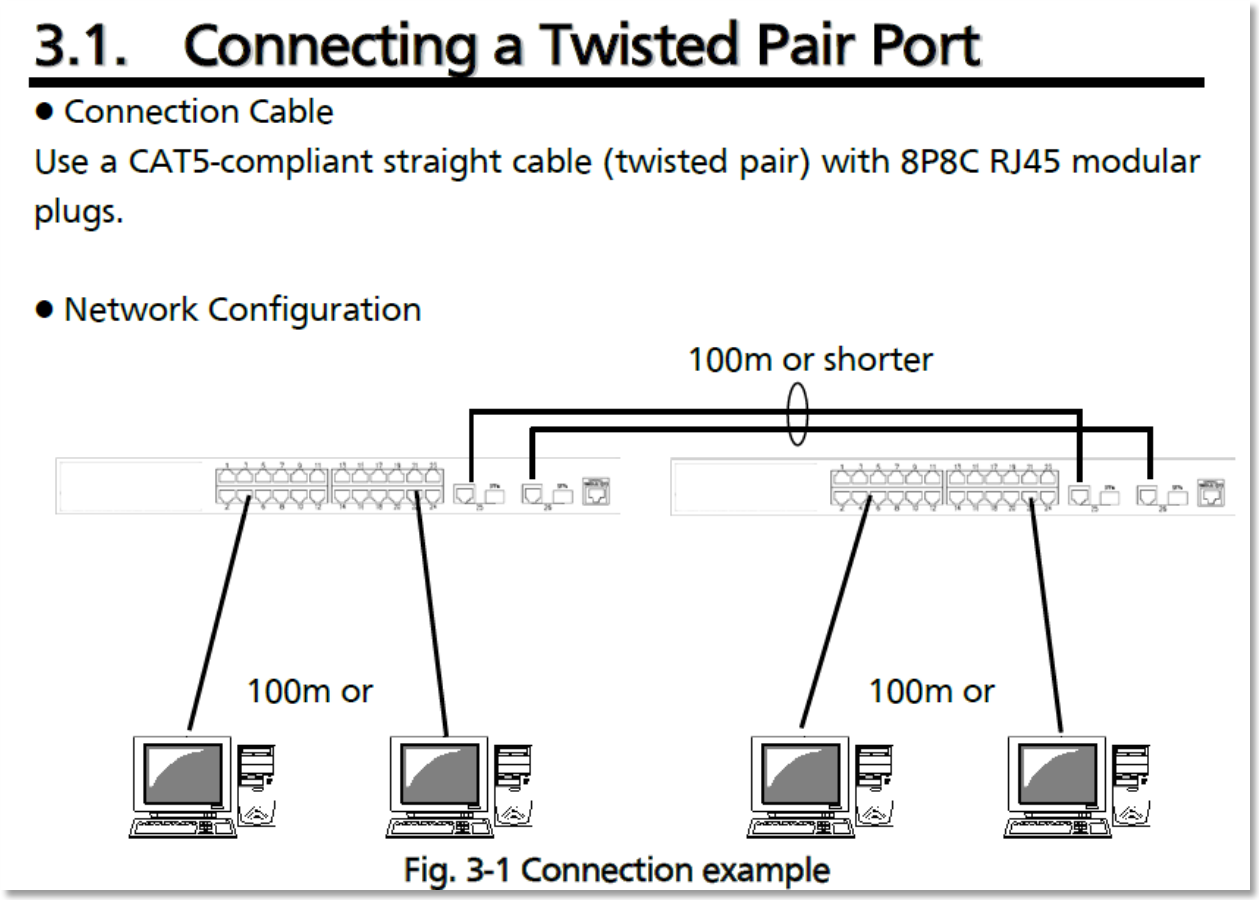
116. Each of the Accused PSE Products is a piece of central network equipment. For example, the Switch-M24PWR Ethernet Switching Hub is a piece of central network equipment.

117. Each of the Accused PSE Products is an Ethernet device. For example, the Switch-M24PWR Ethernet Switching Hub is a central piece of Ethernet equipment:



Switch-M24PWR Operation Manual, p. 11.

118. Each of the Accused PSE Products has at least one Ethernet connector comprising first and second pairs of contacts used to carry BaseT Ethernet communication signals. For example, the Switch-M24PWR Ethernet Switching Hub has at least one RJ-45 Ethernet connector comprising first and second pairs of contacts and is used to carry 10BaseT, 100BaseTX, and 1000BaseT Ethernet communication signals:



Switch-M24PWR Operation Manual, pp. 11, 16.

119. Each of the Accused PSE Products is configured to detect different magnitudes of DC current flow via at least one of the contacts of the first and second pairs of contacts of its Ethernet connector and configured to control application of at least one electrical condition to at least one of the contacts of the first and second pairs of contacts of an Ethernet connector in response to at least one of the magnitudes of the DC current flow. For example, the Switch-M24PWR Ethernet Switching Hub claims compliance with the IEEE 802.3af standard:

Note: This Switching Hub can supply a maximum of 175 W in total to IEEE 802.3af power devices. It can supply a maximum of 15.4 W to each port in accordance with the IEEE 802.3af standard. However, ensure that the total power required by terminals connected to ports 1 through 24 will not exceed 175 W. If this limit is exceeded, the Status field displays "Overload" as shown in 4.7.11.a, which means that power supply is impossible.

Switch-M24PWR Operation Manual, p. 186.

120. The IEEE 802.3af standard describes detecting different magnitudes of current flow that occur as part of the detection and classification protocols:

33.2.4 PD detection

In an operational mode, the PSE shall not apply operating power to the PI until the PSE has successfully detected a PD requesting power.

33.2.5.1 Detection probe requirements

The detection voltage V_{detect} shall be within the V_{valid} voltage range at the PSE PI as specified in Table 33–2 with a valid PD detection signature connected. The PSE shall make at least two measurements with V_{detect} values that create at least a ΔV_{test} difference as specified in Table 33–2 between the two measurements with a valid PD detection signature connected.

NOTE—Settling time before voltage or current measurement: the voltage or current measurement should be taken after V_{detect} has settled to within 1% of its steady state condition.

The PSE shall control the slew rate of the probing detection voltage when switching between detection voltages to be less than V_{slew} as specified in Table 33–2.

The polarity of V_{detect} shall match the polarity of V_{Port} as defined in 33.2.1.

IEEE 802.3af standard, 33.2.4, 33.2.5.1

121. Each of the Accused PSE Products is configured to provide at least one DC current via at least one of the contacts of the first and second pairs of contacts of its Ethernet connector and configured to detect identifying information within the DC current via the at least

one of the contacts of the first and second pairs of contacts of its Ethernet connector. For example, the Switch-M24PWR Ethernet Switching Hub claims compliance with the IEEE 802.3af standard. Switch-M24PWR Operation Manual, p. 186. The IEEE 802.3af standard explains, for example:

33.2.5 PSE validation circuit

The PSE shall detect the PD by probing via the PSE PI. The Thevenin equivalent of the detection circuit is shown in Figure 33–8. PSE requirements are stated for a Thevenin circuit only; they may be transformed via circuit theory into other circuit parameters in specific implementations.

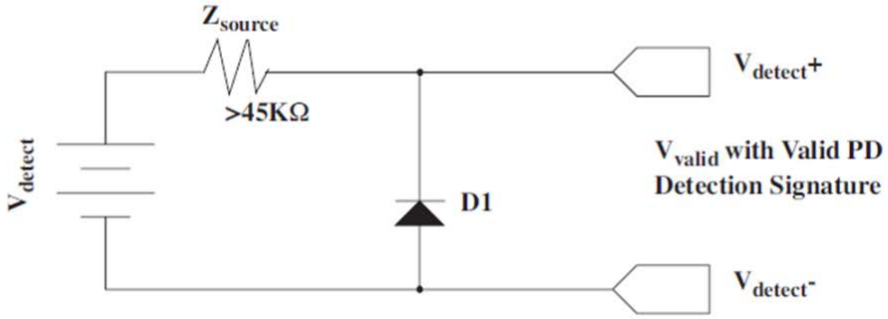


Figure 33–8—PSE detection source

33.2.7.1 Classification power levels

PDs provide information that allow a PSE to classify their power requirements. The classifications are listed in Table 33–3.

Class 4 is reserved for future use. PDs classified as Class 4 shall be treated as Class 0 for powering purposes.

IEEE 802.3af standard, 33.2.5, Figure 33-8, and 33.2.7.1

122. The detection and classification protocols employ different magnitudes of current flow via specific contacts of an Ethernet connector:

33.2.2 PI pin assignments

A PSE device may provide power via one of two valid four-wire connections. In each four-wire connection, the two conductors associated with a pair each carry the same nominal current in both magnitude and polarity. Figure 33–5, in conjunction with Table 33–1, illustrates the valid alternatives.

Table 33–1—PSE pinout alternatives

Conductor	Alternative A (MDI-X)	Alternative A (MDI)	Alternative B (All)
1	Negative V_{Port}	Positive V_{Port}	
2	Negative V_{Port}	Positive V_{Port}	
3	Positive V_{Port}	Negative V_{Port}	
4			Positive V_{Port}
5			Positive V_{Port}
6	Positive V_{Port}	Negative V_{Port}	
7			Negative V_{Port}
8			Negative V_{Port}

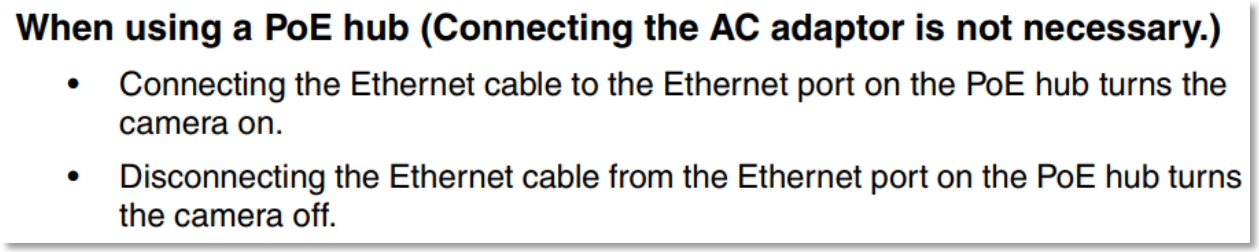
IEEE 802.3af standard, 33.2.2, Figure 33-1

123. Accordingly, Defendants have and continue to directly infringe the `838 Patent, both literally and/or under the doctrine of equivalents, in violation of 35 U.S.C. § 271(a) by making, using, offering for sale, selling, and/or importing into the United States the Accused Products without the authority of Chrimar.

124. Defendants have been on notice of the `838 Patent since at least filing of this Complaint. *See Script Sec. Sols. L.L.C. v. Amazon.com, Inc.*, 170 F. Supp. 3d 928, 937 (E.D. Tex. 2016).

125. In violation of 35 U.S.C. § 271(b), Defendants have indirectly infringed the `838 Patent by inducing their customers to directly infringe the `838 Patent, both literally and/or under the doctrine of equivalents, at least by providing their customers with instructions on using

the Accused Products and by making, using, offering for sale, selling, and/or importing devices in the United States the Accused Products without the authority of Chrimar. For example:



http://ssbu-t.psn-web.net/netwkcam_net/download/us/manual/bbcam/hcm403a_oi.pdf, p. 10

126. Upon information and belief, and in violation of 35 U.S.C. § 271(b), Defendants have indirectly infringed the `838 Patent by contribution knowing that the Accused Products would be combined with other components to infringe the `838 Patent and that the Accused Products have no substantial non-infringing use.

127. Unless enjoined by this Court, Defendants will continue to infringe the `838 Patent.

128. Because of Defendants' infringing activities, Chrimar has suffered damages and will continue to suffer damages in the future.

APPLICATION FOR PRELIMINARY AND PERMANENT INJUNCTION

129. Chrimar alleges and hereby incorporates by reference each and every of the allegations made in the foregoing paragraphs of this Complaint as if each were separately set forth herein.

130. As discussed above, Chrimar was the first company to employ DC current within a BaseT network in the early 1990s and has received a number of US patents for this very important technology, and continues to market its products including the EtherLock® II and ELID products. *See* http://cmstech.com/security_solutions/products/products.html. Chrimar's

EtherLock® II product practices certain claims of the `838 Patent, and the installed ELID/NIC-Stick circuitry practice certain claims of the `107, `760, and `825 Patents. *See also* http://www.cmspatents.com/.

131. Upon information and belief, Defendants, unless enjoined, will continue to infringe Chrimar's intellectual property rights in the `107, `825, `760, and `838 Patents as described in this Complaint.

132. These actions entitle Chrimar to a preliminary injunction and, upon hearing, permanent injunction enjoining Defendants and their officers, agents, servants, employees, users, and attorneys, and all those persons in active concert or in participation with them from:

(i) Making, using, offering to sell, or selling any product that infringes the `107, `825, `760, and `838 Patents, including the Accused Products and all other similar infringing products; and

(ii) Otherwise infringing any rights of Chrimar.

133. For these actions, there is no adequate remedy at law. The Patents-in-Suit cover the core technology of Chrimar's and Defendants' businesses. Defendants' efficient infringement gives them an unfair advantage in the marketplace by allowing Defendants to make infringing alternatives available to the marketplace. In view of this, the injury to Chrimar greatly outweighs any injury to Defendants that the requested injunction may cause, and the balance of hardships tips strongly in favor of Chrimar.

134. Further, Chrimar is substantially likely to prevail on the merits of these claims. For example, in *Chrimar Systems, Inc., et al., v. Alcatel-Lucent Enterprise, USA, Inc.*, Alcatel-Lucent stipulated to infringement of certain claims of the `107, `760, and `838 Patents and the jury rejected Alcatel-Lucent's validity challenge to the `107, `760, and `838 Patent's claims asserted in that case. Civil Action No. 6:15-cv-163-JDL, Dkt No. 349 (Verdict Form, Oct. 10, 2016), Dkt No. 423 (Final Judgment, February 2, 2017) (E.D. Tex.).

135. Finally, the injunction will not disserve the public interest. Here, the public interest favors entry of a permanent injunction because the detrimental effect of inhibiting innovation, coupled with the public's general interest in the judicial protection of property rights in inventive technology, outweighs any interest the public has in purchasing cheaper infringing products.

136. Therefore, Chrimar is entitled to preliminary and permanent injunctive relief against Defendants.

ADDITIONAL ALLEGATIONS

137. Chrimar has complied with 35 U.S.C. § 287.

NOTICE OF REQUIREMENT OF LITIGATION HOLD

138. Defendants are hereby notified they are legally obligated to locate, preserve, and maintain all records, notes, drawings, documents, data, communications, materials, electronic recordings, audio/video/photographic recordings, and digital files, including edited and unedited or "raw" source material, and other information and tangible things that Defendants know, or reasonably should know, may be relevant to actual or potential claims, counterclaims, defenses, and/or damages by any party or potential party in this lawsuit, whether created or residing in hard copy form or in the form of electronically stored information (hereafter collectively referred to as "Potential Evidence").

139. As used above, the phrase "electronically stored information" includes without limitation: computer files (and file fragments), e-mail (both sent and received, whether internally or externally), information concerning e-mail (including but not limited to logs of e-mail history and usage, header information, and deleted but recoverable emails), text files (including drafts, revisions, and active or deleted word processing documents), instant messages, audio recordings

and files, video footage and files, audio files, photographic footage and files, spreadsheets, databases, calendars, telephone logs, contact manager information, internet usage files, and all other information created, received, or maintained on any and all electronic and/or digital forms, sources and media, including, without limitation, any and all hard disks, removable media, peripheral computer or electronic storage devices, laptop computers, mobile phones, personal data assistant devices, Blackberry devices, iPhones, video cameras and still cameras, and any and all other locations where electronic data is stored. These sources may also include any personal electronic, digital, and storage devices of any and all of Defendants' agents, resellers, or employees if Defendants' electronically stored information resides there.

140. Defendants are hereby further notified and forewarned that any alteration, destruction, negligent loss, or unavailability, by act or omission, of any Potential Evidence may result in damages or a legal presumption by the Court and/or jury that the Potential Evidence is not favorable to Defendants' claims and/or defenses. To avoid such a result, Defendants' preservation duties include, but are not limited to, the requirement that Defendants immediately notify their agents and employees to halt and/or supervise the autodelete functions of Defendants' electronic systems and refrain from deleting Potential Evidence, either manually or through a policy of periodic deletion.

JURY DEMAND

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Chrimar demands a trial by jury on all issues triable as such.

PRAYER FOR RELIEF

Chrimar requests that this Court find in its favor and against Defendants, and that this Court grant Chrimar the following relief:

A. An adjudication that Defendants have infringed the `107, `825, `760, and `838 Patents;

B. An award of damages to be paid by Defendants adequate to compensate Chrimar for Defendants' past infringement of the Patents-in-Suit and any continuing or future infringement through the date such judgment is entered (but in no event less than a reasonable royalty in accordance with 35 U.S.C. § 284), including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;

C. A preliminary and permanent injunction enjoining Defendants and their officers, agents, servants, employees, users, attorneys, and all those persons in active concert or participation with Defendants from the acts described in this Complaint;

D. Alternatively, an order requiring Defendants to pay an ongoing royalty in an amount to be determined for any continued infringement after the date judgment is entered;

E. An award of pre-judgment and post-judgment interest to the full extent allowed under the law, as well as their costs;

F. A declaration that this case is exceptional under 35 U.S.C. § 285, and an award of Chrimar's reasonable attorneys' fees;

G. An award to Chrimar of such further relief at law or in equity as the Court deems just and proper.

Dated: November 9, 2017

Respectfully submitted,

/s/ *Gary R. Sorden*

Gary R. Sorden
Texas Bar No. 24066124
gary.sorden@klemchuk.com
Mark D. Perantie
Texas Bar No. 24053647
mark.perantie@klemchuk.com
Timothy J.H. Craddock
Texas Bar No. 24082868
tim.craddock@klemchuk.com
KLEMCHUK LLP
8150 N. Central Expressway
10th Floor
Dallas, Texas 75206
Tel: 214-367-6000
Fax: 214-367-6001

ATTORNEY FOR PLAINTIFFS CHRIMAR SYSTEMS, INC. D/B/A CMS TECHNOLOGIES AND CHRIMAR HOLDING COMPANY, LLC