UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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VOLTSERVER INC.
Petitioner

v.

CISCO TECHNOLOGY, INC.
Patent Owner

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Patent No. 10,735,105

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**DECLARATION OF DAVID A. DURFEE, PH.D.**

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A. "Low Voltage" (Claim 1, 4, 13, 17, 29, 35) and "High Voltage" (Claims 1, 3, 7-10, 14, 15, 21, 23-26, 28, 35) ..... 68



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IX. A POSITA WOULD NOT HAVE UNDERSTOOD THE SCOPE OF CLAIMS 1-5, 7-31, and 33-35 OF THE '105 PATENT WITH REASONABLE CERTAINTY ..... 68

A. Claims 1-5, 7-31, and 33-35 ..... 68

B. Claim 15 ..... 76

[15.a] "A method comprising:" ..... 76

[15.b] "testing at power sourcing equipment comprising a power and data source, a power circuit between the power sourcing equipment and a powered device upon startup of the powered device and determining that the power circuit is operable to receive high voltage direct current (HVDC) pulse power;" ..... 76

[15.c] "delivering the HVDC pulse power from the power sourcing equipment to the powered device over a cable delivering the HVDC pulse power and optical data;" ..... 76

[15.d] "testing at the power sourcing equipment, the power circuit between the power sourcing equipment and the powered device between high voltage pulses; and" ..... 76

[15.e] "communicating at the power sourcing equipment, with the powered device over the cable to identify an operating mode at the powered device based on said testing;" ..... 76

[15.f] "wherein the HVDC pulse power and the optical data are received at an optical transceiver module at the power[ed] device." ..... 76

C. Claim 21 ..... 78

"The method of claim 15 wherein a time between said testing between the high voltage pulses is approximately 1 millisecond." ..... 78

D. Claim 34 ..... 80



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"The apparatus of claim 26 wherein the power module is operable to calculate droop voltage for use in fault sensing." ..... 80

X. THE PRIOR ART DISCLOSES OR SUGGESTS ALL OF THE FEATURES OF CLAIMS 1, 2, 4-26, 28-30, and 32-35 OF THE '105 PATENT ..... 81

A. *Eaves-543* in View of *Chawgo* Discloses or Suggests the Features of Claims 1, 2, 4, 5, 7-12, 14-18, 23-26, 28-29, and 34-35 ..... 81

1. Claim 1 ..... 81

**a) [1.a] "A method comprising:"** ..... 81

**b) [1.b] "receiving electrical power at an optical transceiver module at a remote network device on a cable delivering power on an electrical wire and data on an optical fiber from a central network device;"** ..... 82

**c) [1.c] "operating the remote network device in a low voltage mode during fault sensing at the remote network device;"** ..... 103

**d) [1.d] "transmitting on the cable, a data signal to the central network device, said data signal indicating an operating status based on said fault sensing; and"** ..... 121

**e) [1.e] "receiving high voltage power from the central network device on the cable at the remote network device upon transmitting an indication of a safe operating status, wherein the remote network device is powered by the high voltage power;"** ..... 127

**f) [1.f] "wherein the high voltage power comprises high voltage pulse power and wherein said fault sensing is performed between pulses."** ..... 134



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2. Claim 2 ..... 137

a) **[2.a] "The method of claim 1 further comprising auto-negotiating with the central network device to identify a type of power to apply at the remote network device and"** ..... 137

b) **[2.b] "applying a digital interlock setting a power mode of operation at the remote network device."** ..... 142

3. Claim 4 ..... 146

a) **"The method of claim 1 wherein operating the remote network device in a low voltage mode comprises operating the remote network device in a low voltage mode during startup."** ..... 146

4. Claim 5 ..... 147

a) **"The method of claim 1 wherein said fault sensing performed between the pulses comprises fault sensing a power circuit at the remote network device between the pulses."** ..... 147

5. Claim 7 ..... 151

a) **"The method of claim 1 wherein the high voltage power comprises unipolar pulse power."** ... 151

6. Claim 8 ..... 152

a) **"The method of claim 1 wherein the high voltage power comprises bipolar pulse power."** ..... 152

7. Claim 9 ..... 153

a) **"The method of claim 1 wherein the high voltage power is at least 100 watts and the remote network device is located at a distance greater than 100 meters."** ..... 153

8. Claim 10 ..... 160



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