



Power over the MDI using the two Signal Pairs

Karl Nakamura
karln@cisco.com

Roger Karam
rkaram@cisco.com

Cisco Systems



309-E
1171_04F8_c1



2 Signal Pair Operation

- Overview
- Phone Discovery
- Power Delivery
- Signal Quality Impact

309-E
1171_04F8_c1

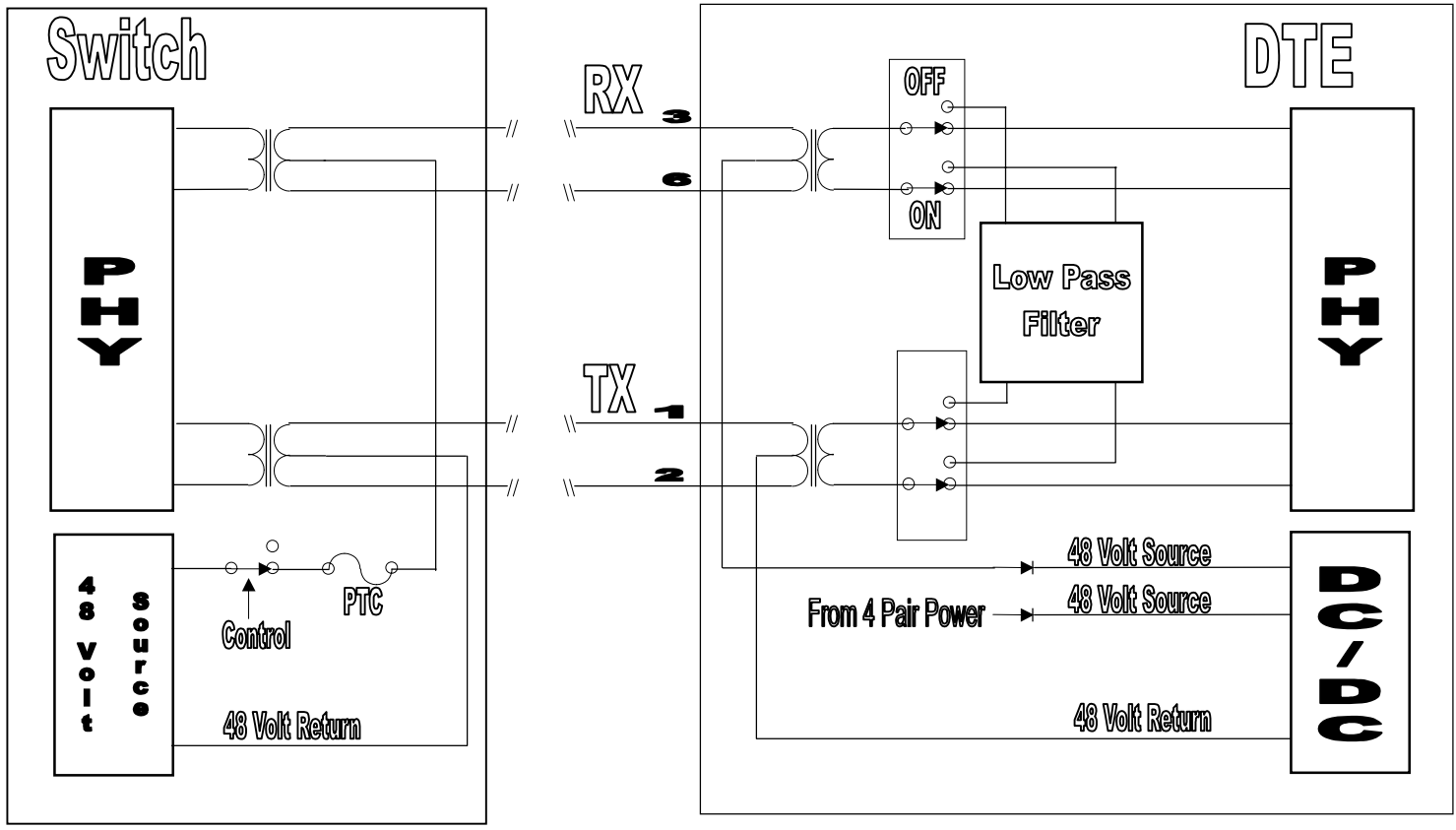
Cisco Systems



2



2 Signal Pair Overview



Cisco Systems



309-E
1171_04F8_c1



Phone Discovery

- **Using Discovery Tone in Loopback without power (see “DTE Power via MDI” by Vafa Rakshani and Kevin Brown of Broadcom on 11/8/99, 3/8/00)**
- **Each Port on Switch Individually Controlled**
- **Power from Switch up to 8-10 Watts @ 48V (see “LAN Magnetics operating under DC Bias Conditions” by Henry Heinricks of Pulse Engineering on 11/8/99)**

309-E
1171_04F8_c1

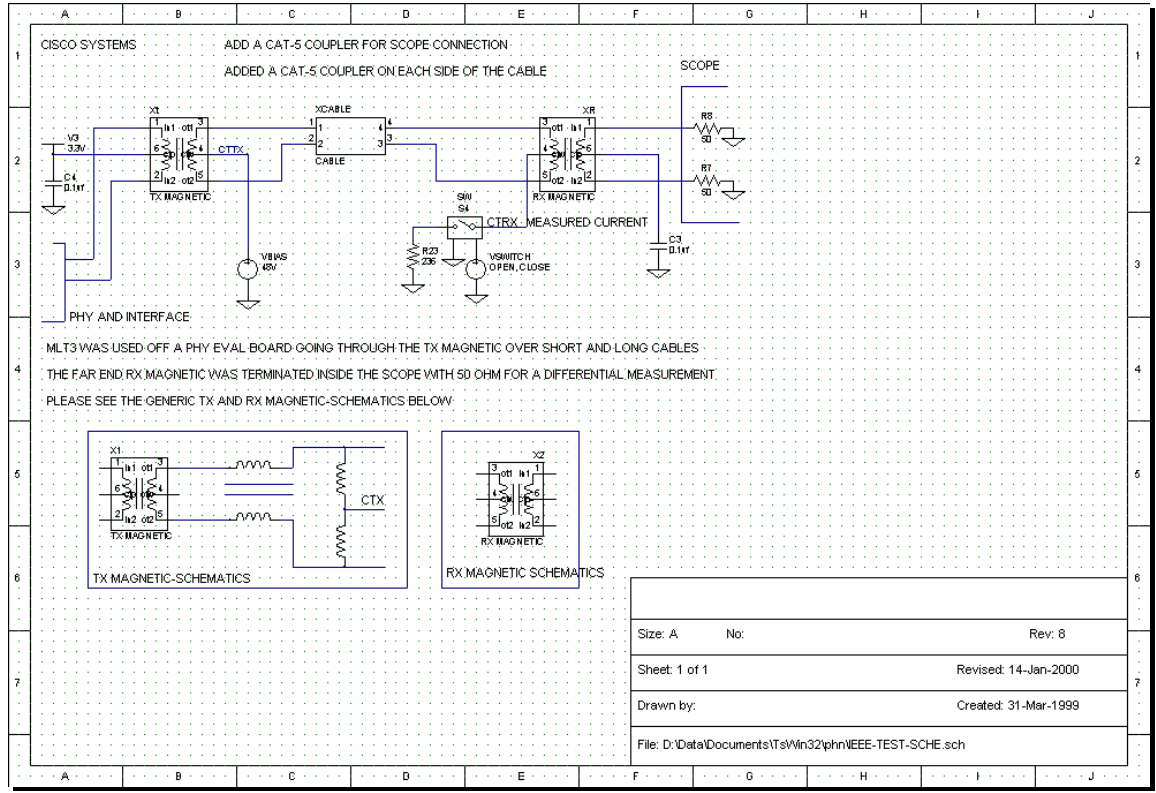
Cisco Systems



4



Signal Quality Measurements



309-E
1171_04F8_c1

Cisco Systems



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.