New! Canary Uni-Directional Data Security Diodes

Provide:

- **One-Way Source-Host IP Traffic Forwarding** · **Reverse Transmissions Blocked** ·
- **Two Input/Output Bi-Directional Host/Proxy IP Ports** · **9 – 48 VDC Option** ·
- *"We Deliver Increased Confidence and Peace of Mind to the Customer!"* ·

Uni-Directional Data Security Diodes provide an additional defense against a broad range of internal/insider or external cyber threats that may escape common security applications and reveal, corrupt, or make mission-critical data and essential services non-available.

Place Canary *Uni-Directional* Data Security Diodes in environments where un-restricted two-way, bi-directional communications expose secure servers and their sensitive data to malicious attack or inadvertent corruption.

Application 1: Data Diode input/output ports provide a channel for Source-Host and Proxy device communication using TCP/IP. The *un-secured* source-side traffic is copied/forwarded to a restricted, High-Security domain using a single Fiber-cable link and second Data Diode. Uni-directional partitioning blocks transmission of sensitive data to the un-secure Source-Host.

Application 2: Position a Data Diode between a Secure Host and its local Proxy as they communicate. One side of the TCP/IP conversation is then copied and forwarded to the second Diode located at an *insecure,* un-trusted target host. All traffic directed to the secure domain and Source Host is blocked.
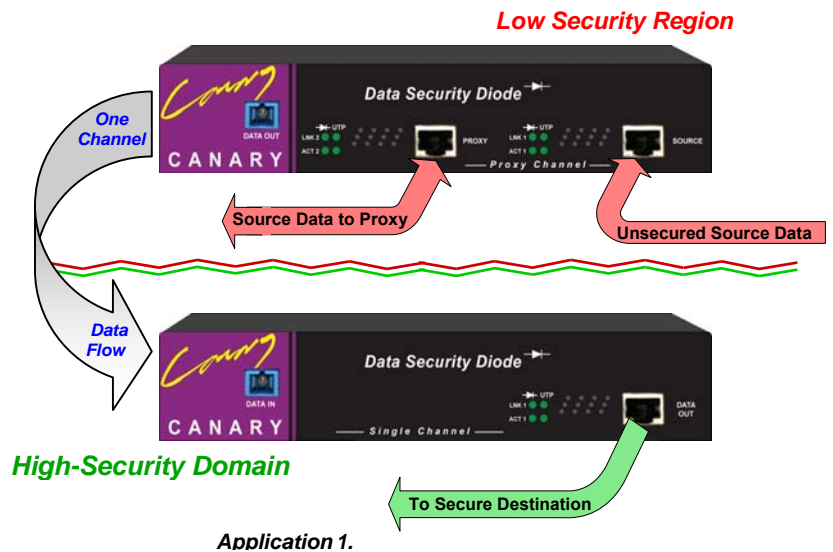
Security Diodes partition their data paths to *shield* secure source(s) from hidden malicious programs preventing the unintended corruption, release or exposure of sensitive information.

Local Diode/Host connections are nominally full-duplex. However, bi-directional traffic is never transmitted between linked Diodes. Data handling functions including Flow-Control, IP acknowledgement and error correction are completely disabled..

Optional: **9-48 VDC** [**-V**] Variable Input-Power & **Conformal Z-Coating** [**-Z**] for reduced Tin-Whisker effects and Environmental Hardening.

Another defensive layer for your critical data, Canary Data Security Diodes *"Deliver increased confidence and peace of mind!"*

CT-21PD/ CT-21R & GT-55PD/ GT-55R –
Proxy-Channel Data Diodes

Low Security Region

One Channel

Source Data to Proxy

Unsecured Source Data

Data Flow

High-Security Domain

To Secure Destination

Application 1.

▪ Plug-and-Go UTP & Fiber Connections:

Connect a pair of *un-secure* Source & Proxy devices to a *CT-21PD* or *GT-55PD* transmit-only *Data Security Diode* that copies one side of a UDP/TCP/IP conversation to a remote *CT-21R* or *GT-55R* receive-only *Diode.* The receive-only *Diode* forwards the one-sided copy to a Secure Destination host. (**Application 1**) Reverse configuration for **Application 2**.

▪ Flexible, Secure Network/Host Configurations:

Low to High: Forward information to a Higher Security environment while blocking the un-authorized release of sensitive data in the reverse direction,

High to Low: Restrict authorized user access. Maintain System and Data Security, Integrity and Availability while allowing the limited export of selective information to lower security-level destinations.

▪ Hardwired Immunity from External Software threats:

Canary *Data Security Diodes* execute their key functions in hardware. There is no vulnerable, software, firmware, memory or buffers that can be exploited to attack and surreptitiously alter or disable their function.

Other Diode versions use UDP or similar protocol over a point-to-point link to eliminate the need for normal transmission acknowledgments.

Control physical access to your Canary Data Security Diodes and safely deliver critical data where needed – *Easy, Secure, Information Availability!*

Canary Communications

Main Features:

Interfaces – Inter-Diode Links & Local Connections:

- CT-21PD: **Tx-Only** (One) One-way Multi-mode (SC) 100Mb F/O port & (Two) *Local Bi-Directional* Linked Host-Proxy RJ-45/UTP ports *
- CT-21R: **Rx-only** (One) m/m SC Fiber plus (1) *Local* RJ-45 **Tx** port
- CT-91PD & CT-91R: Same as above with Single-mode SC Fiber ports
- * [21 ~ SC m/m Fiber Connector, 22 ~ ST-type; 91 ~ SC s/m FC, 92 ~ ST-type]
- GT-55PD: **Tx-Only** (One) One-way SC/SX (m/m) 1000Mb Fiber port & (Two) *Local Bi-Directional* Linked Host-Proxy RJ-45/UTP ports +
- GT-55R: **Rx-only** (One) m/m SC/SX Fiber plus (1) *Local* RJ-45 **Tx** port
- GT-31PD & GT-31R: Same as above with Single-mode SC/LX Fiber port
- + [55 ~ multi-mode, SC/SX-type Fiber connector, 31 ~ single-mode, SC/LX-type]
- CT-21PD-V / 21R-V [VZ] & GT-55PD-V / 55R-V [VZ] Same as above
- [**Z & VZ** ~ include **Conformal Z-Coating** for Environmental Hardening and reduced Tin-Whisker effects]

Networking:

- 100BASE-TX/FX & 1000BASE-T/X: Auto-negotiation and Auto-crossover enable full duplex Ethernet Links with *local*, Source & Proxy devices and separately with *Remote* Destination equipment. Only *local* Source & Proxy devices exchange TCP/IP traffic acknowledgements.
- * 100 & 1000 Mbps Ethernet *Inter-Diode Links* do not forward full duplex bi-directional traffic.

Management:

- No management reporting or access to internal functions
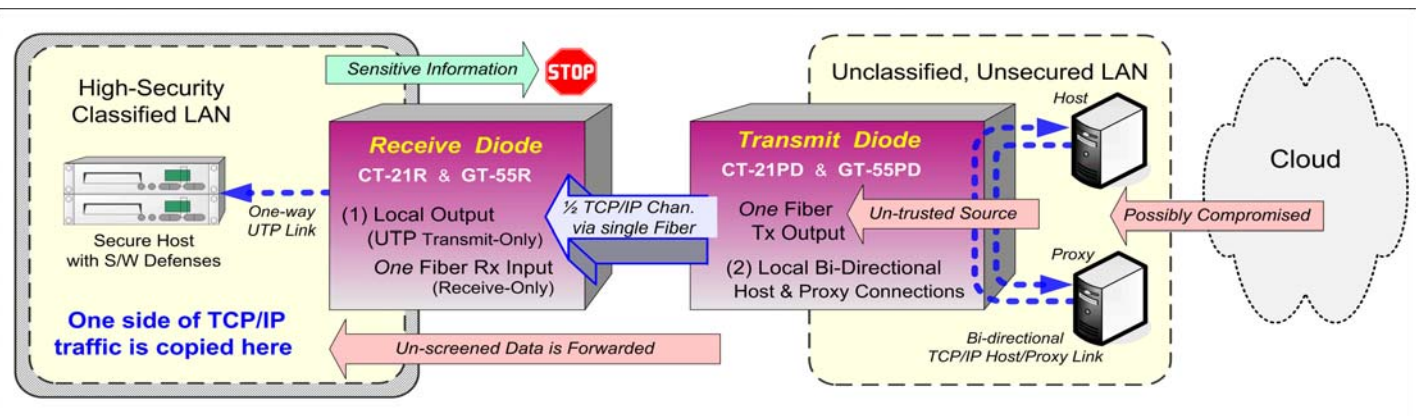- No provision for error handling/reporting

Mechanical & Environmental:

- Inside, Desktop locations or 19" rack-enclosures
- Two units can be mounted side-by-side on a single standard 19-inch wide shelf (available from Canary)

Specifications:

Standards:		
	IEEE 802.3u	100BASE-TX, 100BASE-FX
	IEEE 802.3ab,z	1000BASE-T, 1000BASE-X, SX, LX
	IEEE 802.1d	Spanning Tree: None
	IEEE 802.1q	VLAN: Limited Functionality
	IEEE 802.3x	Flow Control Not Supported
	RFC 2549	IETF IPoAC & QoS 4-01-99
Throughput:	CT-21PD:	100 Mbps (One-way transmission)
	GT-55PD:	1000 Mbps (One-way transmission)
Maximum Distances:	RJ-45/UTP:	100 meters
	Fiber Optic:	100 Mb: 2 Km; 20, 40, 60 Km
		1000 Mb: 500 m, 10, 20, 30, 60 Km
Enclosure:	NEMA 1 & International Protection: IPX0	
Weight:	5.5 lb. (2.5 Kg)	(shipping wt.)

Power:	Typical: 100 ~ 240 VAC Auto-ranging wall-mount
	Optional: 9 - 48 VDC input + Terminal Block (**-V**) (**-VZ**) versions use external DC Voltage Sources
9 - 48 VDC:	**CT-21PD-V [VZ]** and **GT-55PD-V [VZ]**
Temperature:	Operating: 0º C to 50º C
	Storage: -20º C to 70º C
Humidity:	Operating: 10% to 80% RH
	Storage: 5% to 90% RH
Emissions:	CE Mark EN60950 & EN55022 and FCC Part 15 of Class A
Safety:	US 21 CFR (J) & EN 60825-1 standards and UL 1950 applications, EN 60950, CE, TUV
Dimensions:	5.21 in. x 8.43 in. x 1.64 in. (D x W x H) [12.7 cm x 20.3 cm x 4.4 cm] (D x W x H)

JM 11.24.21