

# Updated! Canary Uni-Directional Data Security Diodes

## Provide:

- **One-Way, Two-Channel Data Transmission** ▪ **Return Transmissions Blocked** ▪
- **Mixed RJ-45 & Fiber Host Connections** ▪ **Optional 9 – 48 VDC Power** ▪
- **"We Deliver Increased Confidence and Peace of Mind to the Customer!"** ▪

Canary Uni-Directional Data Security Diodes defend against a broad range of external or internal/insider cyber threats that can escape common security applications to reveal or corrupt sensitive data and make mission-critical information services non-available.

Protect secure servers and sensitive data from compromise. Place Data Security Diodes in environments where un-restricted two-way, bi-directional communications increase the risk of penetration, malicious attack and data loss.

**Application 1:** Data Security Diodes with *Dual* input/output channels, forward information originating from two *un-secured* open sources, to a pair of restricted, High-Security Host destinations using two Fiber-optic links. They simultaneously partition each data path to completely block sensitive data from being transmitted in the reverse direction.

**Application 2:** Position a set of Data Security Diodes to *selectively forward* authorized data originating from two trusted High-Security sources, over a partitioned Fiber link, to a pair of unprotected *insecure* destinations.

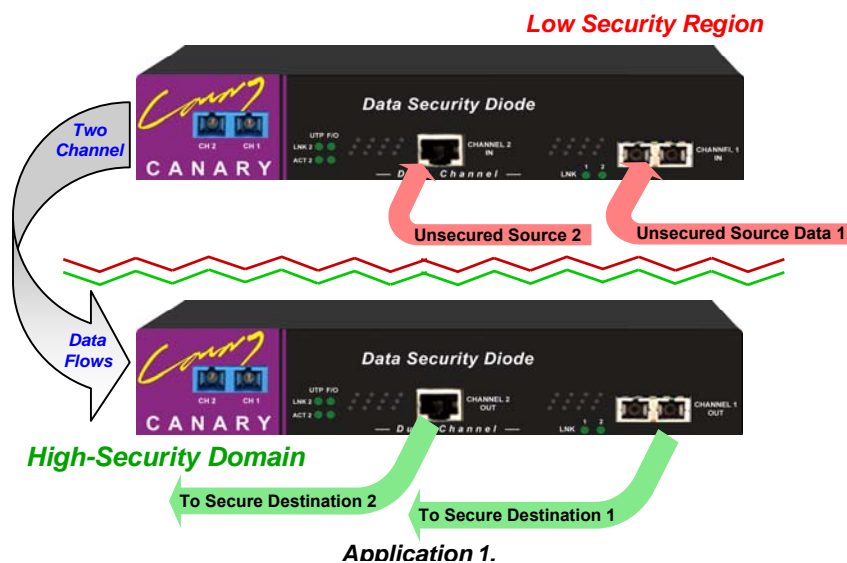
Security Diodes partition their data paths to *shield* secure sources from hidden Trojans, Malware, and other intrusion attempts and prevent the corruption, release or unintended exposure of sensitive information.

Local Diode/Host UTP & Fiber connections are nominally full duplex. However, bi-directional traffic is never transmitted between linked Data Diodes. Data handling functions including IP Acknowledgement, Flow-Control 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!"

## CF-21UTD/ 21UTR & GF-55UTD/ 55UTR – Twin-Channel Mixed Fiber & UTP Data



### ▪ Plug-and-Go Fiber & UTP Connections:

Configure your applications to run via UDP. Connect (2) *un-secure* devices to CF-21UTD or GF-55UTD transmit-only Data Security Diodes that forward the traffic to remote, receive-only CF-21UTR or GF-55UTR Diodes. The receive-only Diodes copy the traffic to a pair of secure Destination Hosts. (**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. With tamper-resistant cases, there is no vulnerable, software, firmware, memory or buffers that can be exploited to attack and surreptitiously alter or disable Uni-directional operation.

Using UDP or similar protocol over a point-to-point link eliminates 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:

- CF-21UTD: (Two) *Local* Data Source **Rx** RJ-45 & multimode SC F/O ports  
(2) One-way SC (m/m) **Tx** only Fiber ports, 100BASE-FX \*
- CF-21UTR: (2) One-way **Rx** only SC Fiber, plus *Local* Fiber & RJ-45 ports
- CF-91UTD & CF-91UTR: Same as above with SC (s/m) **Tx/Rx** Fiber ports
- \* [21 ~ SC m/m Fiber connector, 22 ~ ST-type; 91 ~ SC s/m type, 92 ~ ST-type]
- GF-55UTD: (Two) *Local* Data Source **Rx** RJ-45 & multimode SC F/O ports  
(2) One-way SC (m/m) **Tx** only Fiber ports, 1000BASE-SX +
- GF-55UTR: (2) One-way **Rx** only SC Fiber plus *Local* Fiber & RJ-45 ports
- GF-31UTD & GF-31UTR: Same as above, with SC/LX (s/m) Fiber ports +
- + [X = 55 ~ multi-mode SX, SC-type Fiber & X = 31 ~ single-mode LX / SC]
- CF-21UTD & UTR-V [VZ] & GF-55UTD & UTR-V [VZ] > Same as above
- [Z & VZ ~ include **Conformal Z-Coating** for Environmental Hardening and Tin-Whisker resistance]

Please contact Canary for technical details on additional models.



### Networking – Local User Connections:

- 100BASE-TX & 1000BASE-T: Auto-negotiation and Auto-crossover enable half/full duplex Ethernet Diode Links with *local* Source and separately, *remote* Destination equipment.
- 100BASE-FX & 1000BASE-SX/LX: "Handshake" to configure *Local* Full duplex Links with Source equipment.
- \* 100 & 1000 Mbps Ethernet *Inter-Diode Links* do not forward Full duplex bi-directional traffic. UDP Destination Address & Port Number are enabled by [uni-cast /multi-cast] application

### Management:

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

### Mechanical & Environmental:

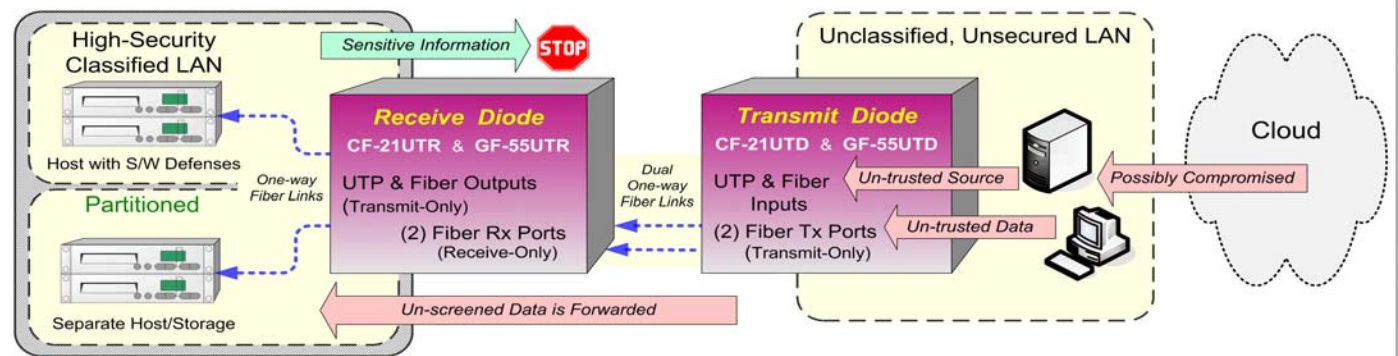
- Inside, Desktop locations or 19" rack-enclosures
- Two units can be mounted side-by-side on a standard 19"-wide shelf (available from Canary)



## Specifications:

<b>Standards:</b>	IEEE 802.3u IEEE 802.3ab,z IEEE 802.1d  IEEE 802.1q IEEE 802.3x RFC 2549	100BASE-TX, 100BASE-FX 1000BASE-T, 1000BASE-X Spanning Tree: None  VLAN: Limited Functionality Flow Control Not Supported IETF IPoAC & QoS 4-01-99
<b>Throughput:</b>	CF-21UTD: GF-55UTD:	100 Mbps (One-way transmission) 1000 Mbps (One-way transmission)
<b>Maximum –</b>	RJ-45/UTP:	100 meters
<b>Distances:</b>	Fiber Optic:	100 Mb: 2 Km, 20, 40, 60, 80 Km 1000 Mb: 500 m, 10, 20, 30, 60 Km
<b>Enclosure:</b>	NEMA 1 & International Protection: IPX0	
<b>Weight:</b>	5.5 lb. (2.5 Kg)	(shipping wt.)

<b>Power:</b>	Typical 100 ~ 240 VAC Auto-ranging wall-mount <b>Optional:</b> 9 - 48 VDC input + Terminal Block (V) (VZ) versions use external DCV Sources
<b>9 - 48 VDC:</b>	<b>CF-21UTD/TR-V [VZ] &amp; GF-55UTD/TR-V [VZ]</b>
<b>Temperature:</b>	Operating: 0° C to 50° C Storage: -20° C to 70° C
<b>Humidity:</b>	Operating: 10% to 80% RH Storage: 5% to 90% RH
<b>Emissions:</b>	CE Mark EN60950 & EN55022 and FCC Part 15 of Class A
<b>Safety:</b>	US 21 CFR (J) & EN 60825-1 standards and UL 1950 applications, EN 60950, CE, TUV
<b>Dimensions:</b>	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)



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For more information, please visit us at:  
[www.canarycom.com](http://www.canarycom.com)  
[info@canarycom.com](mailto:info@canarycom.com)

The Canary Communications QMS  
 is Certified to ISO 9001:2015

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