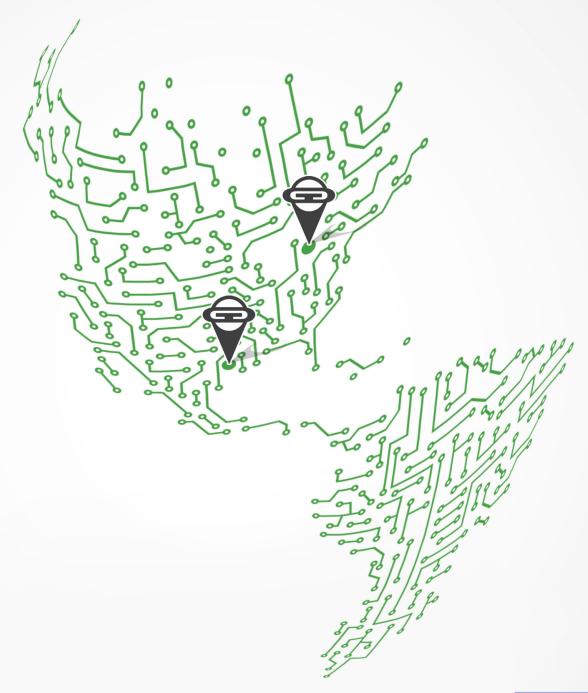


See every bit, byte, and packet®

## **Product** Catalog





Made, tested & supported in the U.S.A. MADE IN THE U.S.A

## **Foundation of Visibility**

## Starts with seeing every bit, byte, and packet®

Garland Technology's best-in-class Network TAP and purpose-built Packet Broker solutions provide an innovative, industry leading 360° visibility view for modern visibility fabrics.

Garland's unique TAP to Tool™ Architecture puts the focus on the performance and visibility of your security and monitoring tools. Offering modular and open vendor solutions, we provide the scalability and flexibility to deploy what you need, when you need it.

It all starts with the packet. On your journey for complete visibility truth, Garland Technology provides visibility, along with increased performance, optimization, scalability and adaptability that adds value to your investment, while mitigating risk.

Adaptability: Scalability. Flexibility. Highest Quality. Simple to Deploy. Add Value.

#### The Garland Leadership



#### Chris Bihary, CEO/Co-Founder

Chris Bihary has been in the network performance industry for over 20 years. Bihary has established collaborative partnerships with technology companies to complement product performance through the integration of network test access points.



#### Jerry Dillard, CTO/Co-Founder

Jerry Dillard leverages two decades in design and engineering to ensure maximum performance within today's network environments. Dillard, as the inventor of the Bypass Network Test Access Point (TAP), has secured his legacy as he continues to provide network solutions for data centers worldwide.

#### Our Commitment to Quality

Garland Technology's focus will remain centered around reliability while delivering the greatest economical solutions for today's network teams and the most complex and extensive data center environments worldwide.



The "Garland Quality Standard" ensures all network TAPs are stress tested with live network data and validated, with zero failures in the field. Made, tested, and supported in the U.S.A.

New York + Texas + Germany + Australia | GarlandTechnology.com | sales@garlandtechnology.com | +1 716.242.8500

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## Garland Technology | Products

Garland Technology ensures complete 360° network visibility by delivering a full platform of network access products including: Breakout TAPs, Aggregator and Regeneration TAPs, Advanced All-In-1 Filtering TAPs, Inline Edge Security Bypass TAPs, Cloud solutions, as well as purpose built Network Packet Broker devices including Advanced Aggregators and Advanced Features.

#### Network Test Access Points (TAPs)



#### Breakout Network TAPs: Passive Fiber and Copper Page 4 Page 12

Fiber network TAPs range in network speeds of 1G, 10G, 25, 40G and 100G. Fiber Network TAPs are passive. Copper network TAPs in network speeds of 10/100M or 10M/100M/1000M (1G). Passive Fiber and Copper. Breakout TAPs make a 100% copy of your network's data without affecting traffic for network monitoring.



#### Aggregator Network TAPs Page 15

Aggregator/regeneration network TAPs are used to capture 100% full duplex network traffic and are available in copper 10/100/1000M (1G) and fiber 1G and 10G, single or multi-mode. Aggregation TAPs support breakout and regeneration/SPAN modes for network monitoring.



#### XtraTAP™: All-In-1 Network TAPs Page 21

All-In-1 filtering network TAPs, available in 1G, allow you to filter out the packets and traffic that is not needed by the tool to perform its function. Filtering ensures that monitoring ports do not become oversubscribed with unneeded data.



#### EdgeSafe™: Bypass Network TAPs Page 24

Bypass network TAPs with failsafe for inline security tools, monitors the appliances' health. Available in 100/1000M/1G and 10G, these TAPs support bypass tap 'breakout,' aggregation and regeneration/SPAN modes, allowing you to optimize the lifecycle of your appliance.



#### Cloud Solutions Page 29

Network Packet Visibility for Public Cloud Environment. Prisms is the most advanced, easiest, and most affordable solution to get cloud packets to monitoring tools and services.

#### Network Packet Broker Solutions



#### PacketMAX<sup>TM</sup>: Advanced Aggregators Page 30

Advanced Aggregators are devices designed to increase efficiency and port utilization in network speeds of 1G, 10G, 25G, 40G and 100G. This is acheived by aggregating and pre-filtering traffic prior to sending out to Network Packet Broker's for advanced filtering or taking the place of network packet brokers in applications where only L2-L4 filtering is required.



#### PacketMAX™: Advanced Features Page 33

Advanced Features is a standalone platform to extend the feature set of any product. The system is designed to support large window deduplication, packet slicing and time stamping. Deduplication and packet slicing can significantly reduce the processing overhead from security or monitoring tools.



#### Hybrid Network Packet Brokers Page 34

Purpose-built Network Packet Brokers, available in 1G and 10G with TAP functionality, the PacketSTAX™ and EdgeLens® provide access to network traffic from multiple links, helping to centralize and improve efficiencies by sharing packets between the monitoring and inline security appliances.

#### Accessories



#### Pluggables Transceivers and Cables Page 38

The most efficient network infrastructure is one that allows traffic to flow seamlessly from end to end and allows for 100% visibility, and access where and when you need it.





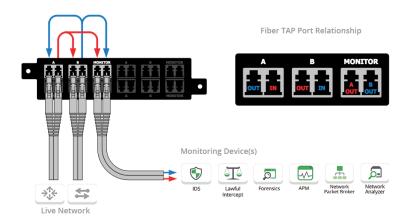
Garland Technology's **Passive Fiber Test Access Points (TAPs)** are high-density, non-powered devices that makes a full copy of any network's data without affecting network traffic, providing visibility and the high-performance monitoring solution required to efficiently manage even the most complex network infrastructure.

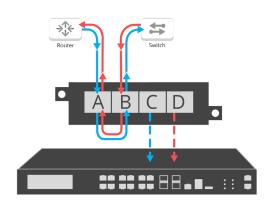
Garland Technology offers fiber network TAPs in network speeds of 1G, 10G, 25G, 40G and 100G and supports OS1/OS2, OM1/OM2/OM3/OM4/OM5 media.

Garland Technology's **Copper Test Access Points (TAPs)** sets the industry's benchmark with features to include link speed synchronization, link failure propagation, media conversion, fail-safe technology, power over ethernet, and utilization rules and alerts, allowing Garland Technology to provide the visibility required to efficiently manage even the most complex network infrastructure.

Garland Technology offers copper network TAPs in network speeds of 10/100M or 10M/100M/1000M (1G).

#### **NETWORK FLOW**





Tap "Breakout" Mode

- 100% network visibility
- 100% secure and invisible; no IP address; no Mac address; cannot be hacked
- Passes physical layer errors
- Packet injection and packet slicing available.
- · Portable, plug & play units or 1U or 2U chassis systems

#### **APPLICATIONS**

- > Network & Application Monitoring
- Network & Application Analysis
- Network & Application Performance
- → Tap "Breakout" Mode is ideal when utilization is very high and packet loss is not an option.



### **SelectTAP**<sup>TM</sup>: Fiber Modular Chassis

#### 1G/10G/25G/40G/100G



- Customize TAPs by media and/or speeds
- Change TAP modules on-the-fly or in the future
- Accommodates 16 to 24 modules, depending on configuration (24 LC TAP Modules, 16 MPO/MTP® TAP Modules, 16 BiDi LC TAP Modules)
- Supports Single-mode: OS1 and Multi-mode: OM3/OM4 media for long range and short range environments\*
- Supports Cisco BiDirectional optical technology
- New prism based technology reduces bit errors on OM3/OM4/OM5 applications, providing 100% utilization
- No power source required
- Tested and Certified







Model #	Network Speed	Ports	# of TAPs	Split Ratio*	Wavelengths	Media	Connector/Mode
FMC-1U	Fiber Modular Chass	is					'
OS2501M	1/10/25/40/100G	90 90 90 90	1	50/50	1310/1550nm	Fiber-OS1/OS2	Fiber-LC Single-Mode Fiber
OS2701M	1/10/25/40/100G	<b>○</b> Mode	1	70/30	1310/1550nm	Fiber-OS1/OS2	Fiber-LC Single-Mode Fiber
OM1501M	1/10G		1	50/50	850/1300nm	Fiber-OM1/OM2	Fiber-LC Multi-Mode Fiber
OM1701M	1/10G		1	70/30	850/1300nm	Fiber-OM1/OM2	Fiber-LC Multi-Mode Fiber
OM4501M	1/10/25G	DOM:	1	50/50	850nm	Fiber-OM3/OM4	Fiber-LC Multi-Mode Fiber
OM4701M	1/10/25G	RIS	1	70/30	850nm	Fiber-OM3/OM4	Fiber-LC Multi-Mode Fiber
OM5501M	1/10/25/40/100G*		1	50/50	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OM5701M	1/10/25/40/100G*		1	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OM4501-40GSR4BiDiM	40G		1	50/50	800-950nm	Fiber-OM3/OM4	Fiber-LC Multi-Mode Fiber
OM4701-40GSR4BiDiM	40G	_	1	70/30	800-950nm	Fiber-OM3/OM4	Fiber-LC Multi-Mode Fiber
OM5501-40GSR4BiDiM	40/100G*		1		850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OM5701-40GSR4BiDiM	40/100G*		1	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OS2502-BiDiM	1G/10G		2	50/50	1270~1350nm/ 1450~1530nm/ 1510~1590nm	Fiber-OS2	Fiber-LC Single-Mode
OS2501-BiDiM	1G/10G	<b>⊙</b> ,⊙	1	50/50	1270~1350nm/ 1450~1530nm/ 1510~1590nm	Fiber-OS2	Fiber-LC Single-Mode
OM4501-SR4BM	40/100G		1	50/50	850nm	Fiber-OM3/OM4	MTP-12 Multi-Mode Fiber
OM4701-SR4BM	40/100G		1	70/30	850nm	Fiber-OM3/OM4	MTP-12 Multi-Mode Fiber
OM5501-SR4BM	40/100/400G*		1	50/50	850-950nm	Fiber OM5	MTP12 Multi-Mode Fiber
OM5701-SR4BM	40/100/400G*		1	70/30	850-950nm	Fiber OM5	MTP12 Multi-Mode Fiber
OM4501-100GSR10AM	100G		1	50/50	850nm	Fiber-OM3/OM4	MTP-24 Multi-Mode Fiber
OM4701-100GSR10AM	100G		1	70/30	850nm	Fiber-OM3/OM4	MTP-24 Multi-Mode Fiber
OS23321X3M	1G/10G	100 b	1	33.3/ 33.3/ 33.3	1310/1550nm	Fiber-OS2	Fiber LC Single-Mode Fiber
OM43321X3M	1G/10G		1	33.3/ 33.3/ 33.3	850nm	Fiber-OM3/OM4	Fiber LC Multi-Mode Fiber

OS2 Fiber supports OS1 & OS2; OM1 Fiber supports OM1 & OM2; OM5 Fiber supports OM3 & OM4. Supports: 90/10, 80/20, 50/50, 70/30, 60/40 \*100G SWDM4



## Single-mode Passive Fiber Network TAPs

1G/10G/25G/40G/100G | Portable



- 1U rack mount kit holds up to 4 modules, each module can have 1, 2, 3, or 4 TAPs
- Single-mode with LC Connectors
- Supports long range and extended range single-mode environments.
- Split ratios available in 50/50; 60/40; 70/30; 80/20 and 90/10
- · Portable, Plug & Play easy installation
- · No power source required
- Tested and Certified





Model # **Network Speed** Ports Wavelengths Media Connnector/Mode Ratio\* **TAPs** 1U Rack Mount Kit - Hold up to 4 Modules, each Module can have 1, 2, 3 or 4 TAPs RMP-1U OS1501 1/10/25/40/100G 50/50 1310/1550nm Fiber-OS1 Fiber-LC Single-Mode Fiber OS1701 1/10/25/40/100G 1 70/30 1310/1550nm Fiber-OS1 Fiber-LC Single-Mode Fiber OS2501 1/10/25/40/100G 1 50/50 1310/1550nm Fiber-OS2 Fiber-LC Single-Mode Fiber OS2701 1/10/25/40/100G 70/30 1310/1550nm Fiber-OS2 Fiber-LC Single-Mode Fiber 1310/1550nm OS1502 1/10/25/40/100G 2 50/50 Fiber-OS1 Fiber-LC Single-Mode Fiber OS1702 1/10/25/40/100G 70/30 1310/1550nm Fiber-OS1 Fiber-LC Single-Mode Fiber OS2502 1/10/25/40/100G 2 50/50 1310/1550nm Fiber-OS2 Fiber-LC Single-Mode Fiber OS2702 1/10/25/40/100G 2 Fiber-OS2 70/30 1310/1550nm Fiber-LC Single-Mode Fiber OS1503 1/10/25/40/100G 3 50/50 Fiber-OS1 Fiber-LC Single-Mode Fiber 1310/1550nm OS1703 1/10/25/40/100G 3 70/30 1310/1550nm Fiber-OS1 Fiber-LC Single-Mode Fiber 3 OS2503 1/10/25/40/100G 50/50 1310/1550nm Fiber-OS2 Fiber-LC Single-Mode Fiber OS2703 1/10/25/40/100G 3 70/30 1310/1550nm Fiber-OS2 Fiber-LC Single-Mode Fiber OS1504 1/10/25/40/100G 4 50/50 1310/1550nm Fiber-OS1 Fiber-LC Single-Mode Fiber OS1704 1/10/25/40/100G 4 70/30 1310/1550nm Fiber-OS1 Fiber-LC Single-Mode Fiber OS2504 1/10/25/40/100G 4 50/50 1310/1550nm Fiber-OS2 Fiber-LC Single-Mode Fiber

70/30

1310/1550nm

Custom split ratios are available in 60/40, 80/20 or 90/10, please inquire.

1/10/25/40/100G



OS2704

Fiber-LC Single-Mode Fiber

Fiber-OS2

### Multi-mode Passive Fiber Network TAPs

1G/10/25/40/100G | Portable



- 1U rack mount kit holds up to 4 modules, each module can have 1, 2, 3, or 4 TAPs
- Multi-mode fiber with LC Connectors
- New Prism based technology that reduces bit errors on OM3
- + OM4/OM5 applications, providing 100% utilization
- Split ratios available in 50/50; 60/40; 70/30; 80/20 and 90/10
- No power source required





RMP-1U

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Model #	Network Speed	Ports	# of TAPs	Split Ratio*	Wavelengths	Media	Connnector/Mode
RMP-1U	E : :	: F	1U Rad	k Mount I	Kit - Hold up to 4 M	odules, each Module	e can have 1, 2, 3 or 4 TAPs
OM1501	1/10G	•	1	50/50	850/1300nm	Fiber-OM1	Fiber-LC Multi-Mode Fiber
OM1701	1/10G		1	70/30	850/1300nm	Fiber-OM1	Fiber-LC Multi-Mode Fiber
OM3501	1/10/25G		1	50/50	850/1300nm	Fiber-OM3	Fiber-LC Multi-Mode Fiber
OM4501	1/10/25G	•	1	50/50	850nm	Fiber-OM3/OM4	Fiber-LC Multi-Mode Fiber
OM4701	1/10/25G	• <del>56</del>	1	70/30	850nm	Fiber-OM3/OM4	Fiber-LC Multi-Mode Fiber
OM5501	1/10/25/40/100G*	• <del>3</del>	1	50/50	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber
OM5701	1/10/25/40/100G*	•	1	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber
OM1502	1/10G		2	50/50	850/1300nm	Fiber-OM1	Fiber-LC Multi-Mode Fiber
OM1702	1/10G		2	70/30	850/1300nm	Fiber-OM1	Fiber-LC Multi-Mode Fiber
OM3502	1/10/25G		2	50/50	850/1300nm	Fiber-OM3	Fiber-LC Multi-Mode Fiber
OM4502	1/10/25G		2	50/50	850nm	Fiber-OM3/OM4	Fiber-LC Multi-Mode Fiber
OM4702	1/10/25G		2	70/30	850nm	Fiber-OM3/OM4	Fiber-LC Multi-Mode Fiber
OM5502	1/10/25/40/100G*		2	50/50	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber
OM5702	1/10/25/40/100G*		2	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber
OM1503	1/10G		3	50/50	850/1300nm	Fiber-OM1	Fiber-LC Multi-Mode Fiber
OM1703	1/10G		3	70/30	850/1300nm	Fiber-OM1	Fiber-LC Multi-Mode Fiber
OM3503	1/10/25G		3	50/50	850/1300nm	Fiber-OM3	Fiber-LC Multi-Mode Fiber
OM4503	1/10/25G		3	50/50	850nm	Fiber-OM3/OM4	Fiber-LC Multi-Mode Fiber
OM4703	1/10/25G		3	70/30	850nm	Fiber-OM3/OM4	Fiber-LC Multi-Mode Fiber
OM5503	1/10/25/40/100G*		3	50/50	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber
OM5703	1/10/25/40/100G*	•	3	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber
OM1504	1/10G		4	50/50	850/1300nm	Fiber-OM1	Fiber-LC Multi-Mode Fiber
OM1704	1/10G		4	70/30	850/1300nm	Fiber-OM1	Fiber-LC Multi-Mode Fiber
OM3504	1/10/25G		4	50/50	850/1300nm	Fiber-OM3	Fiber-LC Multi-Mode Fiber
OM4504	1/10/25G		4	50/50	850nm	Fiber-OM3/OM4	Fiber-LC Multi-Mode Fiber
OM4704	1/10/25G		4 70/30 850nm Fiber-OM3/OM4 Fiber-LC Mul		Fiber-LC Multi-Mode Fiber		
OM5504	1/10/25/40/100G*		4	50/50	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber
OM5704	1/10/25/40/100G*		4	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber

Custom split ratios are available in 60/40, 80/20 or 90/10, please inquire. \*100G SWDM4



## Single-mode Passive Fiber HD Network TAP

1G/10G/25G/40G/100G | High Density | 1U Chassis



- 100% secure and invisible; no IP address; no Mac address; cannot be hacked
- Single mode passive optical for up to 100Gb Ethernet
- Passes physical layer errors
- 1U chassis holds 28 or 56 TAPs 56 TAP units are populated front and back
- Plug & Play easy installation, no configuration; no additional
- Tested and certified

Model #	Network Speed	Chassis	#ofTAPs	Split Ratio*	Wavelengths	Media	Connnector/Mode
OS15028	1/10/25/40/100G	1U	28	50/50	1310/1550nm	Fiber-OS1	Fiber-LC Single-mode Fiber
OS17028	1/10/25/40/100G	1U	28	70/30	1310/1550nm	Fiber-OS1	Fiber-LC Single-mode Fiber
OS25028	1/10/25/40/100G	1U	28	8 50/50 1310/1550nm Fiber-OS2 Fiber-LC Sir		Fiber-LC Single-mode Fiber	
OS27028	1/10/25/40/100G	1U	28	70/30 1310/1550nm Fiber-OS2 F		Fiber-LC Single-mode Fiber	
OS15056	1/10/25/40/100G	1U	56	50/50	1310/1550nm	Fiber-OS1	Fiber-LC Single-mode Fiber
OS17056	1/10/25/40/100G	1U	56	70/30	1310/1550nm	Fiber-OS1	Fiber-LC Single-mode Fiber
OS25056	1/10/25/40/100G	1U	56	50/50	1310/1550nm	Fiber-OS2	Fiber-LC Single-mode Fiber
OS27056	1/10/25/40/100G	1U	56	70/30	1310/1550nm	Fiber-OS2	Fiber-LC Single-mode Fiber

Custom split ratios are available in 60/40, 80/20, 90/10, please inquire. \*56 1U Fiber TAPs are populated front and back.

#### Multi-mode Passive Fiber HD Network TAP







- 100% secure and invisible; no IP address; no Mac address; can't be hacked
- Passes physical layer errors
- Supports Breakout Mode and Jumbo frames
- 1U chassis holds 28 or 56 TAPs 56 TAP units are populated front & back
- Plug & Play easy installation, no configuration; no additional power
- Tested and certified

Model #	Network Speed	Chassis	# of TAPs	Split Ratio*	Wavelengths	Media	Connnector/Mode
OM15028	1/10G	1U	28	50/50	850/1300nm	Fiber-OM1	Fiber-LC Multi-mode Fiber
OM17028	1/10G	1U	28	70/30	850/1300nm	Fiber-OM1	Fiber-LC Multi-mode Fiber
OM35028	1/10G/25G	1U	28	50/50	850/1300nm	Fiber-OM3	Fiber-LC Multi-mode Fiber
OM45028	1/10G/25G	1U	28	50/50	850nm	Fiber-OM3/OM4	Fiber-LC Multi-mode Fiber
OM47028	1/10G/25G	1U	28	70/30	850nm	Fiber-OM3/OM4	Fiber-LC Multi-mode Fiber
OM55028	1/10/25/40/100G*	1U	28	50/50	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber
OM57028	1/10/25/40/100G*	1U	28	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber
OM15056	1/10G	1U	56	50/50	850/1300nm	Fiber-OM1	Fiber-LC Multi-mode Fiber
OM17056	1/10G	1U	56	70/30	850/1300nm	Fiber-OM1	Fiber-LC Multi-mode Fiber
OM35056	1/10G/25G	1U	56	50/50	850/1300nm	Fiber-OM3	Fiber-LC Multi-mode Fiber
OM45056	1/10G/25G	1U	56	50/50	850nm	Fiber-OM3/OM4	Fiber-LC Multi-mode Fiber
OM47056	1/10G/25G	1U	56	70/30	850nm	Fiber-OM3/OM4	Fiber-LC Multi-mode Fiber
OM55056	1/10/25/40/100G*	1U	56	50/50	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber
OM57056	1/10/25/40/100G*	1U	56	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode Fiber

Custom split ratios are available in 60/40, 80/20, 90/10, please inquire. 56 1U Fiber TAPs are populated front and back. \*100G SWDM4



#### **BiDi Passive Fiber** Network TAPs

#### 40G-SR-BiDi | Cisco BiDirectional Optical Technology





- Supports Cisco BiDirectional optical technology
- Unique design provides flexibility to TAP multi-mode OM3/OM4/OM5 fiber types
- New Prism based technology that reduces bit errors on OM3
- + OM4 applications, providing 100% utilization.
- 1U rack mount kit holds up to 4 modules, each module can have 1, 2, or 3 portable TAPs no power source required
- Exclusive high density 1U chassis with 21 TAPs
- · Tested and Certified





Model #	Network Speed	Ports	# of TAPs	Split Ratio*	Wavelengths	Media	Connnector/Mode
RMP-1U		: : :	1U Racl	k Mount K	it, holds up to 4 Mo	dules, each Module c	an have 1, 2, 3 or 4 TAPs
OM4501-40GSR4BiDi	40G		1	50/50	850-950nm	Fiber-OM3/OM4	Fiber-LC-Multi-Mode
OM4502-40GSR4BiDi	40G		2	50/50	850-950nm	Fiber-OM3/OM4	Fiber-LC-Multi-Mode
OM4503-40GSR4BiDi	40G		3	50/50	850-950nm	Fiber-OM3/OM4	Fiber-LC-Multi-Mode
OM5501-40GSR4BiDi	40/100G		1	50/50	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OM5502-40GSR4BiDi	40/100G		2	50/50	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OM5503-40GSR4BiDi	40/100G		3	50/50	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OM45021-40GSR4BiDi	40G		21	50/50	800/950nm	Fiber-OM3/OM4	Fiber-LC-Multi-Mode
OM55021-40GSR4BiDi	40/100G		21	50/50	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OM4701-40GSR4BiDi	40G		1	70/30	850-950nm	Fiber-OM3/OM4	Fiber-LC-Multi-Mode
OM4702-40GSR4BiDi	40G		2	70/30	850-950nm	Fiber-OM3/OM4	Fiber-LC-Multi-Mode
OM4703-40GSR4BiDi	40G		3	70/30	850-950nm	Fiber-OM3/OM4	Fiber-LC-Multi-Mode
OM5701-40GSR4BiDi	40/100G		1	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OM5702-40GSR4BiDi	40/100G		2	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OM5703-40GSR4BiDi	40/100G		3	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OM47021-40GSR4BiDi	40G	• 1999 1999 1999 1999 1999 1999 1999 19	21	70/30	850-950nm	Fiber-OM3/OM4	Fiber-LC-Multi-Mode
OM57021-40GSR4BiDi	40/100G		21	70/30	850-950nm	Fiber OM5	Fiber-LC-Multi-Mode
OS2502-BiDi	1G/10G	© 656 656 656 0	2	50/50	1270~1350nm/ 1450~1530nm/ 1510~1590nm	Fiber-OS2	Fiber-LC Single-Mode
OS2504-BiDi	1G/10G		4	50/50	1270~1350nm/ 1450~1530nm/ 1510~1590nm	Fiber-OS2	Fiber-LC Single-Mode
OS2506-BiDi	1G/10G	· ************************************	6	50/50	1270~1350nm/ 1450~1530nm/ 1510~1590nm	Fiber-OS2	Fiber-LC Single-Mode

#### MPO/MTP® Multi-mode Passive Fiber Network TAPs

40G/100G-SR4 or 100G-SR10 | Portable



- Multi-mode fiber in MTP-12 and MTP-24
- 100G-SR4 can be configured with 4 Channels of 25G in each direction
- New Prism based technology that reduces bit errors on OM3 + OM4/OM5 applications, providing 100% utilization.
- MPO/MTP® brand connectors for lowest dB loss
- 1U rack mount kit holds up to 4 modules, each module can have 1, 2 or 3 portable TAPs

Fiber-OM3/OM4

Fiber-OM3/OM4

Fiber OM5

Fiber OM5

- Portable, Plug & Play easy installation
- · No power source required
- · Tested and Certified



40G/100G

40G/100G

40/100/400G\*

40/100/400G\*

OM4502-SR4B

OM4702-SR4B

OM5502-SR4B

OM5702-SR4B



MTP-12 Multi-Mode Fiber

MTP-12 Multi-Mode Fiber

MTP-12 Multi-Mode Fiber

MTP-12 Multi-Mode Fiber

Model #	Network Speed	Ports	# of TAPs	Split Ratio*	Wavelengths	Media	Connnector/Mode
RMP-1U	- :		1U Rad	ck Mount	: Kit - Hold up to	4 Modules, each Mod	dule can have 1, 2, 3 or 4 TAPs
OM4501-SR4B	40G/100G		1	50/50	850nm	Fiber-OM3/OM4	MTP-12 Multi-Mode Fiber
OM4701-SR4B	40G/100G		1	70/30	850nm	Fiber-OM3/OM4	MTP-12 Multi-Mode Fiber
OM5501-SR4B	40/100/400G*		1	50/50	850-950nm	Fiber OM5	MTP-12 Multi-Mode Fiber
OM5701-SR4B	40/100/400G*		1	70/30	850-950nm	Fiber OM5	MTP-12 Multi-Mode Fiber

2

2

2

2

50/50

70/30

50/50

70/30

850nm

850nm

850-950nm

850-950nm

OM4503-SR4B	40G/100G	écéció	3	50/50	850nm	Fiber-OM3/OM4	MTP-12 Multi-Mode Fiber
OM4703-SR4B	40G/100G	فرفرفرفرف • مارفرفرف • مارفرفرف	3	70/30	850nm	Fiber-OM3/OM4	MTP-12 Multi-Mode Fiber
OM5503-SR4B	40/100/400G*	ف جام فرام فرام • جام بار مار فرام	3 50/50 850-950HIII FIDELONIS MITE-15 MUITI-MO		MTP-12 Multi-Mode Fiber		
OM5703-SR4B	40/100/400G*	_ 	3	70/30	850-950nm	Fiber OM5	MTP-12 Multi-Mode Fiber
OM4501-100GSR10A	100G		1	50/50	850nm	Fiber-OM3/OM4	MTP-24 Multi-mode Fiber
OM4702-100GSR10A	100G		2	70/30	850nm	Fiber-OM3/OM4	MTP-24 Multi-mode Fiber
OM4503-100GSR10A	100G		3	50/50	850nm	Fiber-OM3/OM4	MTP-24 Multi-mode Fiber
OM4701-100GSR10A	100G	100G 100G 1 70/30 850nm Fiber-OM3/OM4		MTP-24 Multi-mode Fiber			
OM4502-100GSR10A	100G	100G 2 50/50 850nm Fiber-OM3/OM4 MTP-24 Mu		MTP-24 Multi-mode Fiber			
OM4703-100GSR10A	100G		3	70/30	850nm	Fiber-OM3/OM4	MTP-24 Multi-mode Fiber

Split ratios available in 50/50; 60/40; 70/30; 80/20 and 90/10. \*100G SWDM4



## **Passive Replication** Network TAPs

### 1G/10G | Splits one single-mode, full duplex input to three outputs



Portable

- Replicate any network traffic
- · Portable, Plug & Play
- · Easy configuration, no power required
- Supports jumbo frames
- · Optional one or two segment configurations per module
- Passes physical errors
- 100% secure and transparent, no IP address, No MAC address; cannot be hacked
- Tested and Certified





1U Chassis



Model #	Network Speed	Ports	Network	Monitor	# of TAPs	Split Ratio*	Wavelengths	Media	Connnector/ Mode
RMP-1U	-	: :	1U Rack M	ount Kit - Ho	old up to	o 4 Modu	les, each Module	can have 1, 2	, 3 or 4 TAPs
OS23321X3	1G/10Gbps	o (1)	1 LC	3 LC	1	33.3/ 33.3/ 33.3	1310/1550nm	Fiber-OS2	Fiber LC Single-Mode Fiber
OS23341X3	1G/10Gbps		1 LC	3 LC	2	33.3/ 33.3/ 33.3	1310/1550nm	Fiber-OS2	Fiber LC Single-Mode Fiber
OS23361X3	1G/10Gbps		1 LC	3 LC	3	33.3/ 33.3/ 33.3	1310/1550nm	Fiber-OS2	Fiber LC Single-Mode Fiber
OS233211X3	1G/10Gbps		1 LC	3 LC	21	33.3/ 33.3/ 33.3	1310/1550nm	Fiber-OS2	Fiber LC Single-Mode Fiber
FMC-1U	Fiber Modular Chassis								
OS23321X3M	1G/10Gbps		1 LC	3 LC	2	33.3/ 33.3/ 33.3	1310/1550nm	Fiber-OS2	Fiber LC Single-Mode Fiber

## **Copper** Network TAP

#### 10M/100M or 10/100/1000M (1G) | Portable



- Failsafe design
- · Link failure propagation
- Supports jumbo frame
- · Portable, Plug & Play units for on-the-go trouble shooting
- 1U rack mount kit holds up to 4 modules, each module can have 1, 2, 3, or 4 TAPs
- · Noiseless operation. No moving parts.
- Easy configure; switches on back
- PoE (Power over Ethernet)
- Tested and Certified





RMP-1U

Model #	Network Speed	Chassis Size	# of TAPs	Passive	Power	Serial Port	Media	Connnector/Mode
RMP-1U	E 8 8	1U Rack Mount Kit - Hold:		Holds up to 4 Portable TAPs				
PT100*	10/100M	Portable	1	Yes	AC	No	Copper	Copper - RJ45
P1GCCB*	10/100/1000M (1G) Portable		1	Failsafe Design	AC	No	Copper	Copper - RJ45

<sup>\*</sup>Supports Power over Ethernet (PoE)

NA.	Model #	Network Speed	Media		N	1odes		
IVI	ouei#	ivetwork speed	Network	Monitor	Breakout	Aggregation	Regeneration	Bypass
INT1	G10CSA	10/100/1000M	4 Copper - RJ-45	2 SFP	Yes	Yes	Yes	No

		Medi	Media		Modes					
Model #	Network Speed	Network	Monitor	Breakout	Aggregation	Regeneration	Bypass	Injection Support		
P1GCCAS	10/100/1000M	2 Copper RJ-45	2 Copper RJ-45	Yes	Yes	Yes	No	No		

	Network	Network Media			Мо		Packet	PoE	
Model #	Speed	Network	Monitor	Breakout	Aggregation	Regeneration/ SPAN	Bypass	Injection Support	Support
P1GCCBP	100/1000M	2 Copper-RJ45	2 Copper -RJ45	Yes	Yes	Yes	Yes	Yes	No
P1GCCBPPOE+	100/1000M	2 Copper-RJ45	2 Copper -RJ45	Yes	Yes	Yes	Yes	Yes	Yes



## Copper Modular Network TAP

#### 10/100M and 10/100/1000M | 1U or 2U 1G Modular Chassis



1U Chassis

- 1U or 2U Data Center Solutions for 1G networks
- Dual AC or DC internal power supplies per Chassis
- Exclusive high density 1U = 4 TAPS | 2 U = 12 TAPS
- Remote management option with CLI or GUI
- Hot swappable
- Link failure propogation (LFP)
- Supports jumbo frames
- Flexible design accommodates any 1G network scenario
- · Scalable design add modules as needed
- Tested and Certified







2U Chassis

Chassis options									
Model #	Chassis/TAPs*	Power Supplies	Voltage	<b>Current</b> (nominal)	Consumption (maximum)	<b>Dimensions</b> (WxHxD)			
M1G1ACE	1U; up to 4 TAPs	Dual Internal AC	100-240VAC	0.75A@115VAC	86.25 Watts	17.40" x 1.75" x 13.45"			
M1G1DCE	1U; up to 4 TAPs	Dual Internal DC	36-60VDC	1A@48VDC	48 Watts	(441.96mm x 44.45mm x 341.63mm)			
M1G2ACE	2U; up to 12 TAPs	Dual Internal AC	100-240VAC	1A@115VAC	115 Watts	17.40" x 3.47" x 13.45"			
M1G2DCE	2U; up to 12 TAPs	Dual Internal DC	36-60VDC	2.8A@48VDC	134.4 Watts	(441.96mm x 88.14mm x 341.63mm)			
M1GC*	C* Management card: Ethernet/GUI - and - Serial/CLI for M1GxxxE								

<sup>\*</sup>Blanking plates are used if management card is not required or if not all TAP modules are populated. Management card and additional GT TAP modules can be added to chassis.

Copper Breakout TAP options										
Media Modes										
Model #	Network Speed	Network	Monitor	Breakout	Aggregation	Regeneration/ SPAN	Filtering	Bypass	Features	
M100CCB*	10/100M	2 Copper-RJ45, passive	2 Copper-RJ45	Yes	No	No	No	No	Passive	
M1GCCB*	10/100/ 1000M	2 Copper-RJ45	2 Copper-RJ45	Yes	No	No	No	No	Link Sync with Fail Safe	

<sup>\*</sup>Supports Power over Ethernet (PoE)



## Military-Grade Industrial Network TAPs

### 10/100/1000M | Modular Portable Chassis | Breakout Mode



- Supports link speed synchronization
- Supports breakout mode
- Connectivity to copper ports
- · Supports jumbo frames
- 1U rack mount holds up to two portable TAPs
- Passes physical errors
- Captures full duplex traffic up to 2Gbps without dropping packets
- 100% secure and transparent, no IP address, No MAC address; cannot be hacked
- Tested and Certified

		Me	edia			Modes				
Model #	Network Speed	Network	Monitor	Breakout	Aggregation	Regeneration	Link Speed Synchronization			
M1GP1G-DC	Two slot Chassis - Holds up to 2 Modular TAPs									
MIGPIG-DC	Single external DC power supply unit									
M100CCBm	10/100M	2 Mighty Mouse 10/100Mbps	2 Mighty Mouse 10/100Mbps	Yes	No	No	Yes			
M1GCCBm	10/100/1000M	2 Mighty Mouse 10/100/1000Mbps	2 Mighty Mouse 10/100/1000Mbps	Yes	No	No	No			





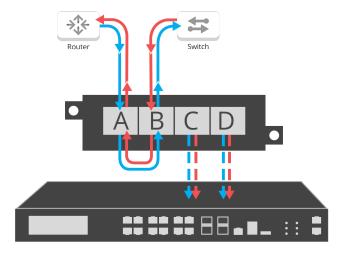
Garland Technology's full line of Aggregator and Regeneration Test Access Points (TAPs) are used to capture full-duplex network traffic where it can be sent to multiple monitoring appliances, providing the visibility required to efficiently manage today's most complex network infrastructures.

- 100% network visibility
- 100% secure and invisible; no IP address; no Mac address; cannot be hacked
- · Media Conversion for:
  - -Fiber 1G (SX, LX to copper/SFP)
- Copper TAPs in 10M/100M or 10/100/1000M (1G)
- · Supports aggregation, tap 'breakout,' regeneration/SPAN, or bypass mode
- Portable, plug & play units, 1U or 2U chassis systems, or 1U modular system

#### **APPLICATIONS**

- > Aggregation mode: Capture 100% full duplex traffic for multiple monitoring appliances or to a single monitoring port
- Tap "Breakout" mode: Use for full utilization to capture 100% traffic
- Regeneration/SPAN mode: Replicate network traffic to three ports
- TAP once: Test and validate in-band security appliances off line then deploy out-of-band (Universal TAPs only)
- > TAP once and send to multiple monitoring devices
- > Capture full duplex traffic from both directions
- > Out-of-band monitoring

#### Network Flow •



Aggregation Mode



## **UniversalTAP**™: Copper Aggregator

#### 100M/1G | Portable | Aggregation, Breakout, Regeneration, and Bypass



- Supports: aggregation, regeneration, tap "breakout," bypass
- Plug & Play; easy configuration; switches on back
- · Use alone, or fit 4 portables into a rack mount kit
- Supports link failure propagation (LFP)
- Supports jumbo frames and passes physical errors
- Supports packet injection in aggregation mode
- · Power over Ethernet (PoE) optional
- · Noiseless, no fans
- FPGA Design
- · Tested and Certified





	Network	Media			Mo	des		Packet	PoE
Model #	Speed	Network	Monitor	Breakout	Aggregation	Regeneration/ SPAN	Bypass	Injection Support	Support
RMP-1U	- 0	•		1U Rack Mo	ount Kit - Holds ι	up to 4 Portable TA	Ps		
P1GCCBP	100/1000M	2 Copper-RJ45	2 Copper -RJ45	Yes	Yes	Yes	Yes	Yes	No
P1GCSBP	100/1000M	2 Copper-RJ45	2 SFP	Yes	Yes	Yes	Yes	Yes	No
P1GCCBPPOE+	100/1000M	2 Copper-RJ45	2 Copper -RJ45	Yes	Yes	Yes	Yes	Yes	Yes
P1GCSBPPOE+	100/1000M	2 Copper-RJ45	2 SFP	Yes	Yes	Yes	Yes	Yes	Yes

## **UniversalTAP**™: 10G Modular Aggregator

10G | 1U Chassis | Aggregation, Breakout, Regeneration, and Bypass



- · Supports: aggregation, regeneration, tap "breakout," bypass
- 10G Media Conversion: to SR, LR and ER
- · Monitor four inline appliances with fail over assurance
- Supports jumbo frames, packet injection, link failure propagation
- 1U chassis system supports up to 4 TAPs
- · Configure and manage remotely or locally
- · Field programmable TAP modules
- · Tested and Certified



Chassis System											
Model #	Descripti	escription									
M10G1ACv2	10G-1U CI	G-1U Chassis System: Supports up to 4 modular Bypass TAPs. Dual internal AC power supplies. Voltage: 90 - 264 Volts									
M10G1DCv2	10G-1U CI	G-1U Chassis System: Supports up to 4 modular Bypass TAPs. Dual internal DC power supplies. Voltage: 36 - 75 Volts									
Madal #	Network	twork Bypass TAP Media Modes									
Model #	Speed	Module	Network	Monitor	Breakout	Aggregation	Regeneration	Bypass			
M10GMSBPv2	10G	SR Multi-mode Fiber	2 SR Multi-mode, LC-Fiber	2 SFP+ Cages	Yes	Yes	Yes	Yes			
M10GSSBPv2	10G	LR Single mode Fiber	2 LR Single mode LC-Fiber	2 SFP+ Cages	Yes	Yes	Yes	Yes			
M10GESBPv2	10G	ER Single mode Fiber	2 ER Single mode LC-Fiber	2 SFP+ Cages	Yes	Yes	Yes	Yes			



## **UniversalTAP**™: 1G Modular Aggregator

#### 1G | 1U/2U | Aggregation, Breakout, Regeneration, and Bypass



1U Chassis

- 1U or 2U Data Center Solutions for 1G networks
- Exclusive high density 1U = 4 TAPS | 2 U = 12 TAPS
- Remote management option with CLI or GUI
- Hot swappable
- Link failure propogation (LFP)
- Supports jumbo frames
- Flexible design accommodates any 1G network scenario
- · Scalable design add modules as needed
- Tested and Certified







2U Chassis

Chassis options									
Model #	Chassis/TAPs*	Power Supplies	Voltage	<b>Current</b> (nominal)	Consumption (maximum)	<b>Dimensions</b> (WxHxD)			
M1G1ACE	1U; up to 4 TAPs	Dual Internal AC	100-240VAC	0.75A@115VAC	86.25 Watts	17.40" x 1.75" x 13.45"			
M1G1DCE	1U; up to 4 TAPs	Dual Internal DC	36-60VDC	1A@48VDC	48 Watts	(441.96mm x 44.45mm x 341.63mm)			
M1G2ACE	2U; up to 12 TAPs	Dual Internal AC	100-240VAC	1A@115VAC	115 Watts	17.40" x 3.47" x 13.45"			
M1G2DCE	2U; up to 12 TAPs	Dual Internal DC	36-60VDC	2.8A@48VDC	134.4 Watts	(441.96mm x 88.14mm x 341.63mm)			
M1GC*	M1GC* Management card: Ethernet/GUI - and - Serial/CLI for M1GxxxE								

<sup>\*</sup>Blanking plates are used if management card is not required or if not all TAP modules are populated. Management card and additional GT TAP modules can be added to chassis.

Aggregator T	AP options	5								
	Network	Media				Modes			Packet	Packet
Model #	Speed	Network	Monitor	Breakout	Aggregation	Regenera- tion/SPAN	Filtering	Bypass	Injection Support	Slicing
M1GCCBP	100/ 1000M	2 Copper-RJ45	2 Copper -RJ45	Yes	Yes	Yes	No	Yes	Yes	Yes
M1GCSBP	100/ 1000M	2 Copper-RJ45	2 SFP	Yes	Yes	Yes	No	Yes	Yes	Yes
M1GMCA	1G	2 SX Multi-mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	No	No	No	Yes
M1GMSA	1G	2 SX Multi-mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	No	No	No	Yes
M1GSCA	1G	2 LX Single-mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	No	No	No	Yes
M1GSSA	1G	2 LX Single-mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	No	No	No	Yes



## **AggregatorTAP**: Fiber

## 1G | Portable | Aggregation, Regeneration, and Breakout



- · Media conversion: SX or LX to copper or SFP
- Supports: aggregation, regeneration/SPAN, tap "breakout" mode
- Plug & Play; easy configuration; switches on back of TAP
- · Use alone, or fit 4 portables into a rack mount kit
- Supports jumbo frames and passes physical errors
- Tested and Certified





RMP-1U

Model #	Network	Media		Modes				
Wodel #	Speed	Network	Monitor	Breakout	Aggregation	Regeneration	Bypass	
RMP-1U			1U Rack Mount Kit - I	Holds up to 4	Portable TAPs			
P1GMCA	1G	2 SX Multi-mode Fiber - LC	2 Copper - RJ-45	Yes	Yes	Yes	No	
P1GMSA	1G	2 SX Multi-mode Fiber - LC	2 SFP	Yes	Yes	Yes	No	
P1GSCA	1G	2 LX Single-mode Fiber-LC	2 Copper - RJ-45	Yes	Yes	Yes	No	
P1GSSA	1G	2 LX Single-mode Fiber-LC	2 SFP	Yes	Yes	Yes	No	

### **AggregatorTAP**: 100Base-FX

## 100BASE-FX | Portable | Aggregation, Regeneration, and Breakout



- Media conversion; 100Base-FX to copper
- · Portable, Plug & Play
- Easy configuration; switches on back of TAP
- Supports: aggregation, regeneration/SPAN, tap "breakout" mode
- · Supports jumbo frames, passes physical errors
- 1U rack mount holds up to four portable TAPs
- A & B live network ports are passive, zero interruption if network is powered up or down
- 100% secure and transparent, no IP address, No MAC address; cannot be hacked
- Tested and Certified





RMP-1U

Model#	Me	edia	Modes				
Wodel #	Network	Monitor	Breakout	Breakout Aggregation		Bypass	
RMP-1U		1U Rack Mount Kit - Holds up to 4 Portable TAPs					
P100FXCA	100Base-FX	2 Copper - RJ-45 100/1000M (1Gbps)	Yes	Yes	Yes	No	



## **AggregatorTAP**: Passive

#### 100M | Portable | Aggregation and Power over Ethernet (PoE)



- Passive 100M
- Two (2) 1G Aggregated Monitoring ports
- Aggregation-mode only TAP
- Supports Power over Ethernet (PoE)
- · Portable, plug and play design
- Supports jumbo frames and passes physical errors
- Single external power supply
- · Tested and Certified





RMP-1U

8.6 - J - 1.11	Network	Media		Modes				
Model #	Speed	Network	Monitor	Breakout	Aggregation	Regeneration	Bypass	
RMP-1U	[			1U Rack Moi	unt Kit - Holds up	to 4 Portable TAPs	;	
P100CCA	100M	2 Copper RJ-45	2 Copper 1000M RJ-45	No	Yes	Yes	No	

## **AggregatorTAP**: Passive

100M | Stack Design | Aggregation and Power over Ethernet (PoE)



- Passive 100M
- Two (2) 1G Aggregated Monitoring ports
- · Aggregation-mode only TAP
- Supports Power over Ethernet (PoE)
- Supports jumbo frames and passes physical errors
- Stack design with board-to-board connectors
- · Media: Dual-row, 8 circuits, copper alloy base, gold flashed
- Single external power supply
- · Tested and Certified



Na del #	Network	Media	Modes				
Model #	# Speed Network		Monitor	Breakout	Aggregation	Regeneration	Bypass
PC104	100M	2-PCB	2-PCB	No	Yes	Yes	No



## AggregatorTAP: Copper

#### 10/100/1000M (1G) | Portable | Aggregation, Regeneration, and Breakout



- · Passive, listen only for monitoring devices
- No Packet Injection
- Supports Link Speed Synchronization
- Supports: aggregation, regeneration/SPAN, tap "breakout" mode
- Plug & Play; easy configuration; switches on back
- · Use alone, or fit 4 portables into a rack mount kit
- · Tested and Certified





		Med		Packet				
Model #	Network Speed	Network	Monitor	Breakout	Aggregation	Regeneration	Bypass	Injection Support
RMP-1U	-	•	1U Rack Mount K	Ps				
P1GCCAS	10/100/1000M	2 Copper RJ-45	2 Copper RJ-45	Yes	Yes	Yes	No	No
P1GCSAS	10/100/1000M	2 Copper RJ-45	2 SFP	Yes	Yes	Yes	No	No

## **AggregatorTAP**: Copper High Density

1G | 1U | Aggregation, Regeneration, and Breakout



- 1U High Density Solution: TAP up to 4 network segments; Aggregate traffic to 1 or 2 monitoring ports; Can fit to 2 INT1G10CSA units in 1U space
- Supports: aggregation, regeneration/SPAN, tap "breakout" mode
- Link speed synchronization
- Link failure propagation (LFP)
- Supports jumbo frames and passes physical errors
- · Tested and Certified.





RMP-1U

Model #	Notared Cood	Media	Modes							
Wodel #	Model # Network Speed		Monitor	Breakout	Aggregation	Regeneration	Bypass			
RMP-1U	1U Rack Mount Plate	J Rack Mount Plate Kit Included								
INT1G10CSA	10/100/1000M	4 Copper - RJ-45	2 SFP	Yes	Yes	Yes	No			





Garland Technology's Filtering Test Access Points (TAPs) ensure that monitoring ports do not become oversubscribed with unneeded data by filtering through the packets and traffic not needed, ultimately providing the visibility required to efficiently manage the most complex network infrastructures.

The modular packet broker chassis system features a flexible and scalable design to meet your network needs today and tomorrow.

- · Scalable Modular TAPs System:
  - -2U holds up to 12 TAPs backplane filtering within TAP row
  - -1U holds up to 4 TAPs backplane filtering between TAPs
- · Management Options: Ethernet with GUI and Serial with CLI controller
- · Dual internal AC or DC power supplies
- TAP modules are hot swappable, fully configurable and interchangeable
- 100% secure and invisible; no IP address, no MAC address; cannot be hacked

#### **APPLICATIONS**

- > Remote Management
- > High density data center design.
- > Network efficiency; only filter the packets required.
- > Media Conversion for 1G networks

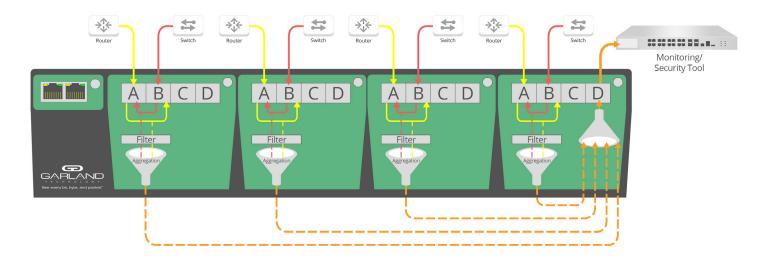
#### **MEDIA CONVERSION:**

Fiber (SX, LX, ZX) to copper (TX) - or copper (TX) to fiber (SX, LX, ZX). Short range fiber (SX) to long range fiber (LX or ZX).

#### **FILTERS:**

- Port Mapping of layers 2, 3, and 4.
- Filterings: MAC, VLAN, IP, DSCP, TCP, UDP
- Protocol: HTTP, VoIP, FTP
- VLAN ID

#### **Network Flow** •





#### XtraTAPTM: All-In-1

#### 1G | Portable | Filtering, Breakout, Aggregation, and Regen | Remote Management



- Easy remote access and management with GUI/CLI card
- Set utilization alerts to avoid oversubscription
- Filter and aggregate to monitoring/analyzer tools
- Supports filtering, tap "breakout," aggregation and regeneration/SPAN modes
- Copper TAPs support Link Speed Synchronization
- 100% secure and invisible; no IP address, no MAC address; cannot be hacked.
- Supports Jumbo frames
- 1U rack mount holds up to 4 portable TAPs
- Tested and Certified





RMP-1U

Model #	Network Speed	Network	Monitor
RMP-1U		1U Rack Mount k	(it - Hold up to 4 Portable TAPs
P1GCCFE	10/100/1000M	2 Copper-RJ45	2 Copper-RJ45
P1GCSFE	10/100/1000M	2 Copper-RJ45	2 SFP
P1GMCFE	1G	2 SX Multi-mode	2 Copper-RJ45
P1GMSFE	1G	2 SX Multi-mode	2 SFP
P1GSCFE	1G	2 LX Single-mode	2 Copper-RJ45
P1GSSFE	1G	2 LX Single-mode	2 SFP



#### **XtraTAP**<sup>TM</sup>: All-In-1 Modular

#### 1G | Portable | Filtering, Breakout, Aggregation, and Regen | Remote Management



- 1U or 2U Data Center Solutions for 1G networks
- Exclusive high density 1U = 4 TAPS | 2 U = 12 TAPS
- · Remote management option with CLI or GUI
- Supports filtering, tap "breakout," aggregation and regeneration/SPAN modes
- · Hot swappable
- · Link failure propogation (LFP)
- Supports jumbo frames
- Flexible design accommodates any 1G network scenario
- · Scalable design add modules as needed
- · Tested and Certified







2U Chassis

Chassis options									
Model #	Chassis/TAPs*	Power Supplies	Voltage	<b>Current</b> (nominal)	Consumption (maximum)	<b>Dimensions</b> (WxHxD)			
M1G1ACE	1U; up to 4 TAPs	Dual Internal AC	100-240VAC	0.75A@115VAC	86.25 Watts	17.40" x 1.75" x 13.45"			
M1G1DCE	1U; up to 4 TAPs	Dual Internal DC	36-60VDC	1A@48VDC	48 Watts	(441.96mm x 44.45mm x 341.63mm)			
M1G2ACE	2U; up to 12 TAPs	Dual Internal AC	100-240VAC	1A@115VAC	115 Watts	17.40" x 3.47" x 13.45"			
M1G2DCE	2U; up to 12 TAPs	Dual Internal DC	36-60VDC	2.8A@48VDC	134.4 Watts	(441.96mm x 88.14mm x 341.63mm)			
M1GC* Management card: Ethernet/GUI - and - Serial/CLI for M1GxxxE									

<sup>\*</sup>Blanking plates are used if management card is not required or if not all TAP modules are populated. Management card and additional GT TAP modules can be added to chassis.

Filtering TAI	P options								
	Network	Media				Link Speed			
Model #	Speed	Network	Monitor	Breakout	Aggregation	Regeneration/ SPAN	Filtering	Bypass	Synchronization
M1GCCF	10/100/ 1000M	2 Copper-RJ45	2 Copper -RJ45	Yes	Yes	Yes	Yes	No	Yes
M1GCSF	10/100/ 1000M	2 Copper-RJ45	2 SFP	Yes	Yes	Yes	Yes	No	Yes
M1GMCF	1G	2 SX Multi-mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	Yes	No	No
M1GMSF	1G	2 SX Multi-mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	Yes	No	No
M1GSCF	1G	2 LX Single-mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	Yes	No	No
M1GSSF	1G	2 LX Single-mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	Yes	No	No



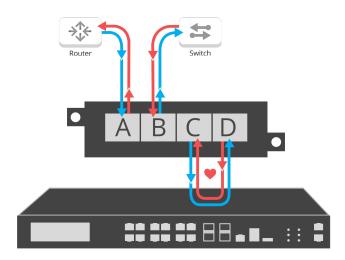
#### The First Line of Defense is Complete Network Visibility Truth.

Unlike SPAN ports, Bypass TAPs provide complete network visibility, by passing all live wire data to active, inline security tools, while monitoring the device's health. If your security tool goes off-line, the bypass TAP automatically 'switches to bypass mode' keeping your network link up while you resolve the issue. Garland Technology knows security; Jerry Dillard, Garland's CTO, invented the Bypass TAP leading to Garland's EdgeSafe™ Bypass TAPs and EdgeLens® Inline Security Packet Broker with failsafe technology that guarantees 100% network uptime and lets your security tools see every bit, byte, and packet.®

#### **APPLICATIONS**

- TAP once and connect one primary and one back up in-band appliance and two out-of-band monitoring appliances
- > Take your inline appliance off-line without interrupting data traffic for: updates, maintenance and troubleshooting
- Network security and monitoring of inline appliances
- Media conversion for fiber, SR, LR, and ER
- Monitor 4 inline appliance with fail over assurance
- > Supports breakout, aggregation, regeneration, and bypass modes
- > High availability when network downtime is not an option

#### Network Flow •



Bypass Mode

For Inline Security Packet Broker with Bypass functionality, please see Hybrid NPBs for the EdgeLens®



## **EdgeSafe**™: Bypass Network TAP

#### 1G | Portable | Failsafe | Remote management or manual programming



- Supports bypass, tap "breakout," aggregation and regeneration/SPAN modes
- Network Failsafe Technology
- Supports: Copper RJ45, SFP, LC single and multi-mode
- Plug and Play, no configuration
- · Use alone, or fit 4 portables in a 1U rack mount kit
- Bypass TAP Invented by Jerry Dillard, CTO and Co-Founder
- Power over Ethernet (PoE) optional
- · Tested and Certified





Model #	Network Speed	Network	Monitor	Packet Injection Support
RMP-1U			1U Rack Mount Kit - Holds	s up to 4 Portable TAPs
	,	Remote Management		
P1GCCBPE	100/1000M	2 Copper RJ-45	2 Copper-RJ45	Yes
P1GCSBPE	100/1000M	2 Copper RJ-45	2 SFP	Yes
P1GCCBPPOE+E	100/1000M	2 Copper RJ-45	2 Copper RJ-45	Yes
P1GCSBPPOE+E	100/1000M	2 Copper RJ-45	2 SFP	Yes
P1GMCBPE	1G	2 SX Multi-mode	2 Copper RJ-45	Yes
P1GMSBPE	1G	2 SX Multi-mode	2 SFP	Yes
P1GSCBPE	1G	2 LX Single-mode	2 Copper-RJ45	Yes
P1GSSBPE	1G	2 LX Single-mode	2 SFP	Yes
	1	Manual Programming		
P1GCCBP	100/1000M	2 Copper-RJ45	2 Copper -RJ45	Yes
P1GCSBP	100/1000M	2 Copper-RJ45	2 SFP	Yes
P1GCCBPPOE+	100/1000M	2 Copper-RJ45	2 Copper -RJ45	Yes
P1GCSBPPOE+	100/1000M	2 Copper-RJ45	2 SFP	Yes
P1GMCBP	1G	2 SX Multi-mode, Fiber-LC	2 Copper -RJ45	Yes
P1GMSBP	1G	2 SX Multi-mode, Fiber-LC	2 SFP	Yes
P1GSCBP	1G	2 LX Single-mode, Fiber-LC	2 Copper -RJ45	Yes
P1GSSBP	1G	2 LX Single-mode, Fiber-LC	2 SFP	Yes



## **EdgeSafe**™: Integrated Bypass Network TAP

### 1G | 1U Chassis | High Availability Solution



- 6 Port High Availability (HA) solution; TAP once and connect one primary and one back up inline appliance and two outof-band monitoring appliances
- Supports: Copper RJ-45 and short and long range fiber (SX, LX, ZX)
- Dual internal power supplies
- High Availability solution in 1U design
- Media conversion: Fiber to Copper
- Bypass TAP Invented by Jerry Dillard, CTO and Co-Founder
- Tested and Certified



Model #	Network	Media	Modes					
	Speed	Network	Monitor	Breakout	Aggregation	Regeneration	Bypass	
INT1G8CCBP	1G	2 Copper-RJ45	6 Copper-RJ45	Ports CDEFGH	GH	No	Ports CDEF	
INT1G8SCBP	1G	2 LX Single-mode, LC-Fiber	6 Copper-RJ45	Ports CDEFGH	GH	No	Ports CDEF	
INT1G8MCBP	1G	2 SX Multi-mode, LC-Fiber	6 Copper-RJ45	Ports CDEFGH	GH	No	Ports CDEF	



## **EdgeSafe**™: 1G Bypass Modular Network TAP

### 1G | 1U or 2U Chassis | Scalable design with media conversion



1U Chassis

- · Ideal for data centers and media conversion
- 1U holds up to 4 TAPS; 2U holds up to 12 TAPs
- · Remote management option with CLI or GUI
- Hot swappable
- · Supports: Copper RJ-45 and short and long range fiber (SX, LX, ZX)
- Supports bypass, tap "breakout," aggregation and regeneration/SPAN modes
- Flexible design accommodates any 1G network scenario
- · Scalable design add modules as needed
- · Tested and Certified







2U Chassis

Chassis options										
Model #	Chassis/TAPs*	Power Supplies	Voltage	<b>Current</b> (nominal)	Consumption (maximum)	<b>Dimensions</b> (WxHxD)				
M1G1ACE	1U; up to 4 TAPs	Dual Internal AC	100-240VAC	0.75A@115VAC	86.25 Watts	17.40" x 1.75" x 13.45"				
M1G1DCE	1U; up to 4 TAPs	Dual Internal DC	36-60VDC	1A@48VDC	48 Watts	(441.96mm x 44.45mm x 341.63mm)				
M1G2ACE	2U; up to 12 TAPs	Dual Internal AC	100-240VAC	1A@115VAC	115 Watts	17.40" x 3.47" x 13.45"				
M1G2DCE	2U; up to 12 TAPs	Dual Internal DC	36-60VDC	2.8A@48VDC	134.4 Watts	(441.96mm x 88.14mm x 341.63mm)				
M1GC*	M1GC* Management card: Ethernet/GUI - and - Serial/CLI for M1GxxxE									

<sup>\*</sup>Blanking plates are used if management card is not required or if not all TAP modules are populated. Management card and additional GT TAP modules can be added to chassis.

Bypass TAP opt	ions									
		Media			Modes					Packet
Model #	Network Speed	Network	Monitor	Breakout	Aggregation	Regeneration/	Filtering	Bypass	Injection Support	Slicing
					33 3	SPAN	J	· ·	(in Aggregatio	on mode)
M1GCCBP	100/ 1000M	2 Copper-RJ45	2 Copper -RJ45	Yes	Yes	Yes	No	Yes	Yes	Yes
M1GCSBP	100/ 1000M	2 Copper-RJ45	2 SFP	Yes	Yes	Yes	No	Yes	Yes	Yes
M1GMCBP	1G	2 SX Multi- mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	No	Yes	Yes	Yes
M1GMSBP	1G	2 SX Multi- mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	No	Yes	Yes	Yes
M1GSCBP	1G	2 LX Single- mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	No	Yes	Yes	Yes
M1GSSBP	1G	2 LX Single- mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	No	Yes	Yes	Yes

## **EdgeSafe**™: 10G Bypass Modular Network TAP

#### 10G | 1U Chassis | Scalable design with media conversion



- · Monitor four inline security appliances with fail over assurance
- Dual internal power supplies
- TAP modules are field upgradable
- Guarantee network uptime for 4 inline appliances with fail over and dual internal power supplies.
- · Media conversion for fiber: SR, LR and ER
- Bypass TAP Invented by Jerry Dillard, CTO and Co-Founder.
- · Tested and Certified







Model #	Description	Description									
M10G1ACv2		0G-1U Chassis System: Supports up to 4 modular Bypass TAPs. Dual internal AC power supplies. Voltage: 85 - 264 Volts, 100 Vatt total power consumption with 4 TAPs									
M10G1DCv2		0G-1U Chassis System: Supports up to 4 modular Bypass TAPs. Dual internal DC power supplies. Voltage: 36 - 72 Volts; 00 Watt total power consumption with 4 TAPs									
	Network	Bypass TAP	Media	Media Modes							
Model #	Speed	Module	Network	Monitor	Breakout	Aggregation	Regeneration/ SPAN	Bypass			
M10GMSBPv2	10G	SR Multi-mode Fiber	2 SR Multi-mode, LC-Fiber	2 SFP+ Cages	Yes	Yes	Yes	Yes			
M10GSSBPv2	10G	LR Single mode Fiber	2 LR Single mode LC-Fiber	2 SFP+ Cages	Yes	Yes	Yes	Yes			
M10GESBPv2	10G	ER Single mode Fiber	2 ER Single mode LC-Fiber	2 SFP+ Cages	Yes	Yes	Yes	Yes			

<sup>\*</sup>Theortical distance - defined as half a distance as stated by the IEEE 802.3 standard.

## **EdgeSafe**™: 40G Bypass Modular Network TAP

## 40G/10G | 1U Chassis | Scalable design with media conversion



- TAP any 10G links and convert to SR, LR, or, ER
- TAP both 40G-SR4, and 40G-LR Links
- Configurable Heartbeat Packets and Heartbeat resolution
- Supports both Local and remote management
- Support for packet injection, jumbo frames, link failure propagation with TACACS, SNMP and Syslog
- · Tested and Certified

Model #	Descripti	Description								
M40G1AC	40G/10G-	1U Chassis System: S	upports up to 3 modular E	Bypass TAPs. Dua	al internal /	AC power supp	olies.			
Model #	Network	Bypass TAP	Media Modes							
Wodel#	Speed	Module	Network	Monitor	Breakout	Aggregation	Regen	Bypass		
M40GMSBP	40G	SR Multi-mode Fiber	2 SR4 Multi-mode, MTP12	2 QSFP+ Cages	Yes	Yes	Yes	Yes		
M40GSSBP	40G	LR Single mode Fiber	2 LR4 Single mode LC-Fiber	2 QSFP+ Cages	Yes	Yes	Yes	Yes		
M10GMS2BP	10G	SR Multi-mode Fiber	4 SR Multi-mode, LC-Fiber	4 SFP+ Cages	Yes	Yes	Yes	Yes		
M10GSS2BP	10G	LR Single mode Fiber	4 LR Single mode LC-Fiber	4 SFP+ Cages	Yes	Yes	Yes	Yes		





#### Network Packet Visibility for Public Cloud Environment

Prisms is the most advanced, easiest, and most affordable solution to get cloud packets to monitoring tools and services. Prisms allows organizations to access, process and deliver packet-level traffic from VMs and containers in any public cloud. Our next generation agent technology sends processed packet traffic to your tools and services both in-cloud and off-cloud.

With Prisms, customers activate and run the tools of their choice to gain the critical visibility and control they need. Prisms allows organizations to accelerate their cloud transformations with clarity and confidence.



#### **Acquire**

Acquire packet traffic from any cloud source. Solve agent sprawl with a single, scalable sensor for all your cloud tools

Capture, see, send and orchestrate packets from:

- Cloud provider infrastructure like agentless Azure VTAPs and VxLAN devices like cloud firewalls and routers.
- · Cloud workloads like VMs, containers, and soon PaaS
- · North South and East West packets
- Inter- and intra- cloud packets



#### **Process**

Advanced Packet Processing Filters, Prepares & Optimizes Replicated Streams

Prisms' Service Processor (PSP) is an elastic processing engine that prepares packet streams for distribution to your tool destinations.

The PSP is container-based and infinitely scalable. It sits inside your own cloud subscription which maximizes security while minimizing impact on resources and exit charges.



#### **Distribute**

Distribute processed cloud packet traffic to any IP address – in the cloud or off-cloud

Distribute cloud packet traffic to any team, tool or process you require. Replicate the same source packet stream to multiple destinations to save cost, compute overhead and management strain.

Replicate full packet streams for storage, monitoring and compliance or use advanced sampling to send the heartbeat of your cloud to your teams and tools.



Garland Technology's PacketMAX™: Advanced Aggregators are devices designed to increase efficiency and port utilization of network packet brokers. Aggregators improve ROI by reducing the total cost of a network visibility fabric and increasing the efficiency of existing infrastructure.

#### **APPLICATIONS**

- > Aggregation of multiple TAP/SPAN ports for increased utilization
- > Connect to Network Packet Broker or directly to tools
- High Density filtering, aggregation and load balancing
- ➤ Aggregation solution for large and medium size data centers
- Aggregation for enterprise and service provider networks

Garland Technology's PacketMAX<sup>TM</sup>: Advanced Features, is designed as a standalone platform to extend the feature set of any product. The system is designed to support large window deduplication, packet slicing and time stamping. Deduplication and packet slicing can significantly reduce the processing overhead from security or monitoring tools.

#### APPLICATIONS

- > Extend the feature set of Garland's Advanced Aggregators or any existing infrastructure
- > Reduce the load to security or monitoring tools by removing duplicate packets introduced by SPAN ports
- Reduce the volume of traffic by keeping only important header information
- Add time stamps to any or all packets for increased understanding of latency and distortions within the visibility fabric
- > Extending the life of existing security and monitoring tools by reducing traffic volume



## **PacketMAX**<sup>TM</sup>: 1G Advanced Aggregator

#### 1G/10G | 1U Chassis | 52 Port | Filtering, Aggregation, and Load Balancing



- Aggregate traffic to a single or multiple tools (1:1, 1:N, N:1, N:N)
- · Supports 10M/100M/1G/10G network speeds
- · OpenFlow/SDN enabled
- · Start and Terminate GRE Tunnels and VXLAN Tunnels
- Up to 52 fully supported ports no additional per-port license fees
- Supports jumbo frames
- · Hot swappable, dual AC power supplies

#### FILTER HIGHLIGHTS:

- · User defined filters for Layer 2, 3, and 4
- IPv4/IPv6, MAC, L4Port, VLAN, Ethertype, IP protocol
- Supports GRE Tunneling and Termination
- · Supports VLAN stripping, QinQ support
- Full line rate filtering
- Packet modification
- 1k filters
- · Session/flow aware load balancing
- · Configurable hash-based load balancing
- · Flow replication and port mirroring
- Data burst buffering
- · Management through GUI, and SNMP



Model #	Ports	Network Speed	1G Ports	10G Ports	Power *	Watts
AA1G52AC		1/10G	(48) RJ45	(4) SFP+	1+1 redundant AC Power Supplies	65W

## PacketMAX<sup>TM</sup>: 10G Advanced Aggregator

#### 1G/10G/40G | 1U Chassis | 54 Port | Filtering, Aggregation, and Load Balancing



- Aggregate traffic to a single or multiple tools (1:1, 1:N, N:1, N:N)
- · Supports 1G/10G/40G network speeds
- · OpenFlow/SDN enabled
- IPv4/IPv6 and UDF Filter support
- · Start and Terminate GRE Tunnels
- Start and Terminate VXLAN Tunnels
- Up to 72 fully supported ports no additional per-port license fees
- Port splitting functionality



- · User defined filters for Layer 2, 3, and 4
- IPv4/IPv6, MAC, L4Port, VLAN, Ethertype, IP protocol
- · Supports MPLS stripping, single and stacked
- · Supports VLAN stripping, QinQ support
- Full line rate filtering
- Packet modification
- Supports jumbo frames
- · Hot swappable, dual power supplies AC standard, DC available
- 1k filters
- · Session/flow aware load balancing
- · Configurable hash-based load balancing
- Flow replication and port mirroring
- · Data burst buffering
- Management through GUI, and SNMP



Model #	Ports	Network Speed	10G Ports	40G Ports	Power	Watts	SNMP/ Syslog Support
AA10G54AC		1G/10G/ 40G	(48) SFP/SFP+,	(6) QSFP+	AC	195	Yes
AA10G54DC		1G/10G/ 40G	(48) SFP/SFP+,	(6) QSFP+	DC	195	Yes



## PacketMAX<sup>TM</sup>: 40G Advanced Aggregator

#### 10G/40G/100G | 1U Chassis | 24 Port | Filtering, Aggregation, and Load Balancing



#### FILLERS:

- User defined filters for Layer 2, 3, and 4
- IPv4, MAC, L4Port, VLAN, Ethertype, IP protocol
- Supports VXLAN decapsulation/encapsulation
- · Supports VLAN Stripping, QinQ support
- Full line rate filtering
- Packet modification
- Aggregate traffic to a single or multiple tools (1:1, 1:N, N:1, N:N)
- · Supports 10G/40G/100G network speeds
- IPv4 and UDF Filter support
- · Timestamping Layer 2 Header
- 24 fully supported ports no additional per-port license fees
- Port splitting functionality
- Supports jumbo frames
- · 4,000 filter rules

- Session/flow aware load balancing
- Hash-based load balancing and Round-Robin distribution
- Forward latency, less than 1uscc
- · Hot swappable, dual Power Supplies, AC standard, DC available
- · Management through CLI, GUI, and SNMP
- RADIUS and TACACS remote user authentication
- sFlow Support



Model #	Ports	Network Speed	40G Port	100G Port	Power Supplies
AA40G24AC		10/40/100G	(20) QSFP+	(4) QSFP28	AC
AA40G24DC		10/40/100G	(20) QSFP+	(4) QSFP28	DC

## PacketMAX™: 100G Advanced Aggregator

10G/25G/40G/100G | 1U Chassis | 32 Port | Filtering, Aggregation, and Load Balancing



#### **FILTER HIGHLIGHTS:**

- · User defined filters for Layer 2, 3, and 4
- IPv4/IPv6, MAC, L4Port, VLAN, Ethertype, IP protocol
- Supports MPLS stripping, single and stacked
- · Supports VLAN stripping, QinQ support
- Full line rate filtering
- Packet modification
- Aggregate traffic to a single or multiple tools (1:1, 1:N, N:1, N:N)
- · Supports 10G/25G/40G/100G network speeds
- · OpenFlow/SDN enabled
- IPv4/IPv6 and UDF Filter support
- · Start and Terminate GRE Tunnels
- · Start and Terminate VXLAN Tunnels
- 32 fully supported ports no additional per-port license fees
- Port splitting functionality

- Supports Wil Es strippin
- Supports jumbo frames
- · Hot swappable, dual power supplies AC standard, DC available
- 1k filters
- · Session/flow aware load balancing
- · Configurable hash-based load balancing
- · Flow replication and port mirroring
- · Data burst buffering
- Management through GUI, and SNMP



Model #	Ports	Network Speed	40G Port	100G Port	Power *	Watts	SNMP /Syslog support
AA100G32AC		10/25/40/ 100G	(32) QSFP+	(32) QSFP28	AC Power	410	Yes
AA100G32DC		10/25/40/ 100G	(32) QSFP+	(32) QSFP28	DC Power	410	Yes

## PacketMAX™: 100G 64 Port Advanced Aggregator

#### 10G/25G/40G/100G | 2U Chassis | 64 Port | Filtering, Aggregation, and Load Balancing



- Aggregate traffic to a single or multiple tools (1:1, 1:N, N:1, N:N)
- · Supports 10G/25G/40G/100G network speeds
- · OpenFlow/SDN enabled
- Start and Terminate GRE Tunnels
- Start and Terminate VXLAN Tunnels
- 64 fully supported ports no additional per-port license fees
- Port splitting functionality
- Hot swappable, dual power supplies AC standard, DC available

#### **FILTERS HIGHLIGHTS:**

- · User defined filters for Layer 2, 3, and 4
- IPv4/IPv6, MAC, L4Port, VLAN, Ethertype, IP protocol
- · Supports MPLS stripping, single and stacked
- Supports VLAN stripping, QinQ support
- Full line rate filtering
- Packet modification
  - Supports jumbo frames
  - 1k filters
  - · Session/flow aware load balancing
  - · Configurable hash-based load balancing
  - Flow replication and port mirroring
  - · Data burst buffering
  - Management through GUI, and SNMP



Model #	Ports	Network Speed	40G Port	100G Port	Power *	Watts	SNMP /Syslog support
AA100G64AC		10/25/40/ 100G	(64) QSFP+	(64) QSFP28	AC Power	600	Yes
AA100G64DC		10/25/40/ 100G	(64) QSFP+	(64) QSFP28	DC Power	600	Yes

## **PacketMAX**<sup>TM</sup>: 10G Advanced Features

#### 4x10G | Scalable packet processing system



- FPGA Based design for increased flexibility
- Large window deduplication (4M packet window, 250ms for an average size of 256B)
- Additional 1 PPS input for GPS or CDMA receiver used to discipline the PLL
- ${}^{\bullet}$  Timing Options: GPS (via SMA), PPS (via MCX), IEEE-1588/PTP (via RJ45), Optional OCXO

#### Solutions:

Garlands AF10G4AC is ideal for:

- Adding advanced features to existing equipment
- Supplementing features of new installs
- NTP Time stamping
- 4ns time stamp resolution
- · Configurable time stamping format
- Fully configurable packet slicing from 64-9000B
- Intuitive CLI for configuration
- · Tested and certified



Model #	Network Speed	Ports	Power	Watts
AF10G4AC	10G	(4) SFP+	1+1 redundant AC power supplies	135W
AF10G4DC	10G	(4) SFP+	1+1 redundant DC power supplies	135W





# **Hybrid Network Packet Brokers** with Network TAP Functionality

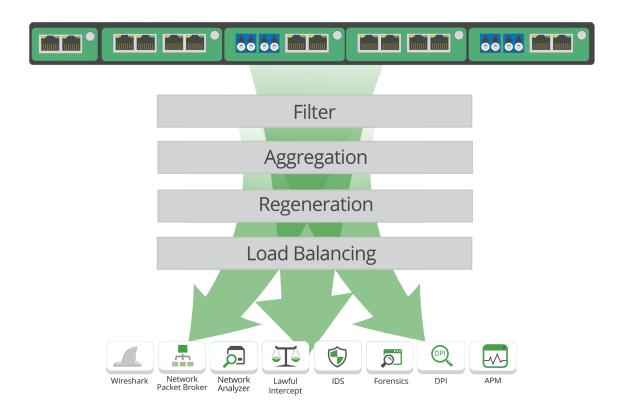
Garland Technology's Purpose Built Network Packet Brokers (NPBs), the PacketSTAX™ and EdgeLens®, provide access to network traffic from multiple links, helping to centralize and improve efficiencies by sharing packets between the monitoring and security appliances. NPBs centralize network traffic making the tools function more efficiently by sharing packets between monitoring/security appliances. Additional features include: filtering, aggregating, regenerating, and load balancing.

- · Available in 1G/10G network speeds
- Modular 1U, 2U Chassis or 1U Integrated Systems
- · Supports all media copper (TX), short range (SX and SR) and long range (LX, ZX, LR, ER) fiber
- · Multi-mode or single-mode
- · All features are included
- 100% network visibility
- 100% secure and invisible; no IP address; no Mac address; cannot be hacked

#### **APPLICATIONS**

- ▶ High density solution
- > Packet analysis
- > Root cause analysis
- > Historical lookback
- > Validate policy changes
- > Remote Management

- Management of inline security tools and out-of-band monitoring tools
- Load balancing for increased bandwidth demands
- > EtherChannel (Port Channel Architecture)
- Media Conversion
- Network efficiency; only filter the packets required





## PacketSTAX<sup>™</sup>: Modular Hybrid Packet Broker 1G | 1U/2U Chassis | Port-to-Port Aggregator with Port Mapping Filtering



2U Chassis

- Supports filtering, tap "breakout," aggregation, regeneration/SPAN and bypass modes
- · Scalable Modular TAPs System:
  - -2U holds up to 12 TAPs backplane filtering within TAP row
  - -1U holds up to 4 TAPs backplane filtering between TAPs and port
- · Management and Non-Management options:
  - -Management: CLI/GUI/SSH/HTTP/Telnet
  - -Non-management chassis available; (management card can be added)



Remote Access

- **Port Mapping**: filter allows granular selection of network traffic at layers 2, 3 and 4 of the packet to provide monitoring tools only the traffic they are designed (or intended) to inspect
- Multi-Tier Filtering Supports: MAC, VLAN, IP, DSCP, TCP, UDP
- SNMP V2c/V3
- · Dual internal AC or DC power supplies
- TAP modules are hot swappable, fully configurable and interchangeable
- Accommodates GT legacy modular TAPs

- Network Failsafe recognizes power outages and automatically closes the relay circuitry in less than 8 milliseconds then reconnects the two network devices connected to Ports A & B
- Supports jumbo frames and passes physical errors
- Packet slicing and packet injection (aggregate mode for copper network port TAPs)
- 100% secure and invisible; no IP address, no MAC address; cannot be hacked
- · Tested and certified

<b>Chassis options</b>								
Model #	Chassis/TAPs*	Power Supplies	Voltage	<b>Current</b> (nominal)	Consumption (maximum)	<b>Dimensions</b> (WxHxD)		
M1G1ACE	1U; up to 4 TAPs	Dual Internal AC	100-240VAC	0.75A@115VAC	86.25 Watts	17.40" x 1.75" x 13.45"		
M1G1DCE	1U; up to 4 TAPs	Dual Internal DC	36-60VDC	1A@48VDC	48 Watts	(441.96mm x 44.45mm x 341.63mm)		
M1G2ACE	2U; up to 12 TAPs	Dual Internal AC	100-240VAC	1A@115VAC	115 Watts	17.40" x 3.47" x 13.45"		
M1G2DCE	2U; up to 12 TAPs	Dual Internal DC	36-60VDC	2.8A@48VDC	134.4 Watts	(441.96mm x 88.14mm x 341.63mm)		
M1GC*	Management card: Ethernet/GUI - and - Serial/CLI for M1GxxxE							

<sup>\*</sup>Blanking plates are used if management card is not required or if not all TAP modules are populated. Management card and additional GT TAP modules can be added to chassis.

Copper Breakout TAP options										
	Network	Me	dia			Modes				
Model #	Speed	Network	Monitor	Breakout	Aggregation	Regeneration/ SPAN	Filtering	Bypass	Features	
M100CCB*	10/100M	2 Copper-RJ45, passive	2 Copper-RJ45	Yes	No	No	No	No	Passive	
M1GCCB*	10/100/ 1000M	2 Copper-RJ45	2 Copper-RJ45	Yes	No	No	No	No	Link Sync with Fail Safe	

<sup>\*</sup>Supports Power over Ethernet (PoE)



sales@garlandtechnology.com

## **PacketSTAX**™: Modular Hybrid Packet Broker

## 1G | 1U/2U Chassis | Port-to-Port Aggregator with Port Mapping Filtering

		Medi				Modes			В	acket		
Model #	Network Speed		Monitor	Breakout	Aggregation	Regeneration SPAN	/ Filterir	ng Bypa	ss Inj	ection pport	Packet Slicing	
M1GCCBF	100/ 1000M	2 Copper-RJ45	2 Copper -RJ45	Yes	Yes	Yes	No	Yes		Yes	Yes	
M1GCSBP	100/ 1000M	2 Copper-RJ45	2 SFP	Yes	Yes	Yes	No	Yes		Yes	Yes	
M1GMCBI	<b>1</b> G	2 SX Multi- mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	No	Yes		Yes	Yes	
M1GMSBI	<b>1</b> G	2 SX Multi- mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	No	Yes		Yes	Yes	
M1GSCBP	1G	2 LX Single- mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	No	Yes		Yes	Yes	
M1GSSBP	1G	2 LX Single- mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	No	Yes		Yes	Yes	
Filtering TAP	options							<u> </u>			•	
	Network	Media				Modes				Link	Speed	
Model #	Speed	Network	Monitor	Breakout	Aggregation	Regeneratio SPAN	n/ Filter	ing Byp	oass S		onizatior	
M1GCCF	10/100/ 1000M	2 Copper-RJ45	2 Copper -RJ45	Yes	Yes	Yes	Yes	5 1	10	Yes		
M1GCSF	10/100/ 1000M	2 Copper-RJ45	2 SFP	Yes	Yes	Yes	Yes	5   1	No		es	
M1GMCF	1G	2 SX Multi-mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	Yes	5   1	No		No	
M1GMSF	1G	2 SX Multi-mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	Yes	5 N	10	٨	10	
M1GSCF	1G	2 LX Single-mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	Yes	5 1	10	N	10	
M1GSSF	1G	2 LX Single-mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	Yes	5   1	10	٨	10	
Aggregator T	AP options											
Model #	Network	Media				Modes			Pack Injecti		Packet	
	Speed	Network	Monitor	Breakout	Aggregation	Regenera- tion/SPAN	iltering	Bypass	Suppo		Slicing	
M1GCCBP	100/ 1000M	2 Copper-RJ45	2 Copper -RJ45	Yes	Yes	Yes	No	Yes	Yes		Yes	
M1GCSBP	100/ 1000M	2 Copper-RJ45	2 SFP	Yes	Yes	Yes	No	Yes	Yes		Yes	
M1GMCA	1G	2 SX Multi-mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	No	No	No		Yes	
M1GMSA	1G	2 SX Multi-mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	No	No	No		Yes	
M1GSCA	1G	2 LX Single-mode, passive LC-Fiber	2 Copper -RJ45	Yes	Yes	Yes	No	No	No		Yes	
M1GSSA	1G	2 LX Single-mode, passive LC-Fiber	2 SFP	Yes	Yes	Yes	No	No	No		Yes	



## **EdgeLens®** Inline Security Packet Broker

#### 1G/10G | 1U Chassis | Fail-safe | Filtering, Aggregation, and Load Balancing



- Supports filtering, aggregating, load balancing, and regeneration
- TAP a 1G link or 10G link and deliver data to 1G & 10G appliances
- TAP once and connect multiple inline appliances
- Integrated 1U chassis bypass TAP system
- · Dual AC hot swappable power supplies
- 1 Management port; 1 Console port
- · Heartbeat packet health check
- · Network failsafe for active, inline appliances
- · Session aware load balancing
- MPLS Header Stripping
- VLAN Tagging and Stripping

#### **FILTERS:**

- User defined filters for layer 2, 3, and 4
- MAC, IPv4/IPv6, TCP/UDP, MPLS, and Ethertype
- Protocol: HTTP, VoIP, FTP

- VLAN ID
- User Defined Byte (UDB)
- Ingress and egress filtering



Model #	Ports	Network Speed	SFP/SFP+ Ports	Bypass TAPs	Power Consump- tion	Dual Hot Swappable <b>Power</b> Supplies*
INT10G2SRBP10SFP+		1G/10G	10 SFP/SFP+	(1) 1G-SX/10G-SR TAP 2 fiber ports	115 Watts	AC
INT10G2LRBP10SFP+		1G/10G	10 SFP/SFP+	(1) 1G-SX/10G-LR TAP 2 fiber ports	115 Watts	AC
INT10G8SRBP16SFP+		1G/10G	16 SFP/SFP+	(4) 1G-SX/10G-SR TAP 8 fiber ports	139 Watts	AC
INT10G8LRBP16SFP+		1G/10G	16 SFP/SFP+	(4) 1G-SX/10G-LR TAP 8 fiber ports	139 Watts	AC

Power Supply options	
PS10-HS-DC	Hot Swappable DC -48vdc Power Supplies
PS10-HS-AC	Hot Swappable AC Power Supplies (*Two included with each EdgeLens order)

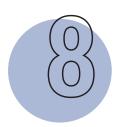
(2) Two power supplies are required for each chassis

Available Pluggab	Available Pluggables & Cables:						
Model #	Description						
SFPTX	SFP 10/100/1000 Copper RJ-45 Connector						
SFPSX	SFP 1000Base-SX Multi-Mode Fiber LC Connector						
SFPLX	SFP 1000Base-LX Single Mode Fiber LC Connector						
SFP+SR	SFP+ Dual Speed 1 Gigabit-SX / 10 Gigabit-SR Multi-Mode Fiber LC Connector						
SFP+LR	SFP+ Dual Speed 1 Gigabit-LX / 10 Gigabit-LR Single Mode Fiber LC Connector						
SFP+ER	SFP+ 10Gigabit-ER Single-Mode Fiber LC Connector						
SFP+SR10	SFP+ 10Gigabit-SR Multi-Mode Fiber LC Connector - only supports 10G						
SFP+LR10	SFP+ 10Gigabit-LR Multi-Mode Fiber LC Connector - only supports 10G						
TWINAX1M*	Twinax Copper Direct Connect Cable SFP+ 10Gigabit 1 Meter						



<sup>\*</sup>Also available in 5 and 10 meters.





# Pluggables and Cables Management and Connectivity

Connect your tools and TAPs to your network with quality made pluggables for copper and fiber optic networks. Garland Technology offers SFP and SFP+ pluggables that support 10/100/1000M copper and 1G, 10G, and 40G. Custom cable lengths are available in 1' and 1m increments.

## **Pluggable Transceivers**







Pluggable Transceivers		
Model #	Network Speed	Description
SFPTX	1 Gbps	1000BASE-TX, SFP 10/100/1000 RJ45 copper
SFPSX	1 Gbps	1000BASE-SX, SFP Multimode Fiber 850nm
SFPLX	1 Gbps	1000BASE-LX, SFP Singlemode Fiber 1310nm - 10km
SFPEX40km	1 Gbps	1000BASE-EX, SFP Singlemode Fiber 1310nm - 40km
SFPEX90km	1 Gbps	1000BASE-EX, SFP Singlemode Fiber 1550nm - 90km
SFP+T	10 Gbps	10GBASE-T, SFP+ 100M/1G/10G RJ45 copper
SFP+SR	10 Gbps	10GBASE-SR, SFP+ Multimode Fiber 850nm (1 or 10G)
SFP+LR	10 Gbps	10GBASE-LR, SFP+ Singlemode Fiber 1310nm - 10km (1 or 10G)
SFP+ER	10 Gbps	10GBASE-ER, SFP+ Singlemode Fiber 1550nm - 40km
SFP+ZR80	10 Gbps	10GBASE-ZR, SFP+ Singlemode Fiber 1550nm - 80km
SFP+SR10G	10 Gbps	10GBASE-SR, SFP+ Multimode Fiber 850nm (only supports 10G)
SFP+LR10G	10 Gbps	10GBASE-LR, SFP+ Singlemode Fiber 1310nm - 10km (only supports 10G)
QSFP+40G	40Gbps	40GBASE-SR4, QSFP+ Multimode Fiber, MPO/MTP-12 Connector
QSFP+40-LR4	40Gbps	40GBASE-LR4, QSFP+ Singlemode Fiber, LC Connector
QSFP+10GLR	40Gbps	40GBASE-LR Singlemode with MTP/MPO connector for Fan-out Cables
QSFP+40GBiDi	40Gbps	40GBASE-SR BiDi, QSFP+ Multimode Fiber with LC Connectors
QSFP+28SR4	100Gbps	100GBASE-SR4, QSFP+28 Multmode Fiber, MPO/MTP-12 Connector
QSFP+28LR4	100Gbps	100GBASE-LR4, QSFP+28 Singlemode Fiber, LC Connector



## **Cables**





Twinax / Direct Attach Cables:	
Model #	Description
TWINAX1M	Twinax Copper Direct Connect Cable SFP+ to SFP+ 10Gigabit, Pre-Cut 1 Meter
TWINAX3M	Twinax Copper Direct Connect Cable SFP+ to SFP+ 10Gigabit, Pre-Cut 3 Meter
TWINAX5M	Twinax Copper Direct Connect Cable SFP+ to SFP+ 10Gigabit, Pre-Cut 5 Meter
TWINAX7M	Twinax Copper Direct Connect Cable SFP+ to SFP+ 10Gigabit, Pre-Cut 7 Meter
TWINAX10M	Twinax Copper Direct Connect Cable SFP+ to SFP+ 10Gigabit, Pre-Cut 10 Meter
TWINAX40G.5M	Direct Attach Copper Cable QSFP+ to QSFP+ 40Gigabit, Pre-Cut Half Meter
TWINAX40G1M	Direct Attach Copper Cable QSFP+ to QSFP+ 40Gigabit, Pre-Cut 1 Meter
TWINAX40G2M	Direct Attach Copper Cable QSFP+ to QSFP+ 40Gigabit, Pre-Cut 2 Meter
TWINAX40G3M	Direct Attach Copper Cable QSFP+ to QSFP+ 40Gigabit, Pre-Cut 3 Meter
TWINAX100G1M	Direct Attach Copper Cable QSFP28 to QSFP28 100Gigabit, Pre-Cut 1 Meter
TWINAX100G3M	Direct Attach Copper Cable QSFP28 to QSFP28 100Gigabit, Pre-Cut 3 Meter
TWINAX100G5M	Direct Attach Copper Cable QSFP28 to QSFP28 100Gigabit, Pre-Cut 5 Meter
Fan-out Cables: QSFP to LC Connec	ctions
MTP12F-LC8MOM4_3	MPO/MTP to 8x 10Gb Multimode Fiber connections with LC connectors, 3 Meters (Cable)
MTP12F-LC8MOS2_3	MPO/MTP to 8x 10Gb Singlemode Fiber connections with LC connectors, 3 Meters (Cable)
Breakout Cables: QSFP to 10G SFP	+ Connections
QSFP-4SFP+_1	Direct Attach Copper Cable QSFP+ to 4x 10Gb SFP+, Pre-Cut 1 Meter
QSFP-4SFP+_2	Direct Attach Copper Cable QSFP+ to 4x 10Gb SFP+, Pre-Cut 2 Meter
QSFP-4SFP+_3	Direct Attach Copper Cable QSFP+ to 4x 10Gb SFP+, Pre-Cut 3 Meter
Breakout Cables: 100G QSFP28 to	25G SFP28 Connections
QSFP28-4SFP28-Cable_1	Direct Attach Copper Cable QSFP28 to 4x 25Gb SFP28, Pre-Cut 1 Meter
QSFP28-4SFP28-Cable_3	Direct Attach Copper Cable QSFP28 to 4x 25Gb SFP28, Pre-Cut 3 Meter



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## Foundation of -Visibility Starts with seeing every bit, byte, and packet®



See every bit, byte, and packet®