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Data Sheet

General Availability

CypherPlug

Miniature Network Security Device

- End-to-end static transport mode IPSEC encryption
- Part of RAD's Smart SFP portfolio
- Designed for seamless protection enhancement of any existing SFP-based network device
- Wire-speed encryption (1000 Mbps)
- Low OpEx due to decreased power consumption, space and installation costs compared to other solutions
- Plug-and-play solution

RAD's CypherPlug® is a miniature IP-level network security device that encrypts traffic over any IP network.

CypherPlug's innovative design breaks through the barriers of cost and complexity for customers who seek to add a higher level of security to their networks.

CypherPlug is an SFP sleeve form factor, capable of hosting any standard MSA compatible 100M or 1GE SFPs. CypherPlug transparently envelops a large variety of SFPs, enabling full reuse of customer equipment and seamless deployment over multiple access infrastructure types, such as short-haul and long-haul fiber connections, bidirectional single-fiber links, and copper lines.

The SFP sleeve is easily pluggable into standard MSA compatible SFP ports of switches, routers, DSLAMs and mobile base stations, eliminating the use of external power and reducing space and cabling expenses.

CypherPlug's functionality is based on a powerful FPGA that enables easy customization to additional or different customer requirements.

MARKET SEGMENTS AND APPLICATIONS

As an important part of the toolkit offered by RAD's Smart SFP portfolio, CypherPlug is the perfect solution for customer networks seeking to enhance secure connectivity without replacing existing gear.

CypherPlug supports end-to-end static IPsec in transport mode for highly secured enterprise customers such as government, critical infrastructure, and military sectors.

ETHERNET

CypherPlug can be configured as an FE or GbE compatible device. The GbE option supports auto-negotiation.

SECURITY

CypherPlug aims to create protected separated groups and prevent and block any possibility of traffic access between the different groups by means of Transport IPsec (IPv4). CypherPlug uses GCM which a block cipher mode of operation providing both confidentiality and data origin authentication. AES-GCM-ESP uses a 128-bit key (AES-GCM-128) for both confidentiality (encryption) and data origin authentication as per RFC-4106. Packets that fail ESP-ICV authentication (16-byte key) are dropped.

CypherPlug supports Point-to-Point as well as Multipoint to Multipoint secure applications.

MANAGEMENT AND SECURITY

CypherPlug configuration and software download are performed only via SFP-CA.2. The configuration cannot be changed via the hosting device or using inband management.

RAD

Your Network's Edge®

CypherPlug

Miniature Network Security Device

Specifications

ETHERNET INTERFACES

Type	SFP-based, MSA-compliant edge connectors
Rate	100/1000 Mbps
Autonegotiation	Configurable for 1000 Mbps
Compliance	IEEE 802.3
Max. Frame Size	9,600 bytes

MANAGEMENT

SW Download	via boot menu driven screens
	via CLI
Configuration	CLI only

SECURITY

Encryption	AES-GCM-128
Type	IPv4 only
IPsec encapsulation	RFC-4106: The use of Galois/Counter Mode (GCM) in IPsec Encapsulating Security Payload (ESP)
	RFC-4303: IP Encapsulating Security Payload (ESP)
	Transport mode IPsec
	Static IPsec
Traffic Handling	Encrypt/Pass/Drop function configurable for each frame type

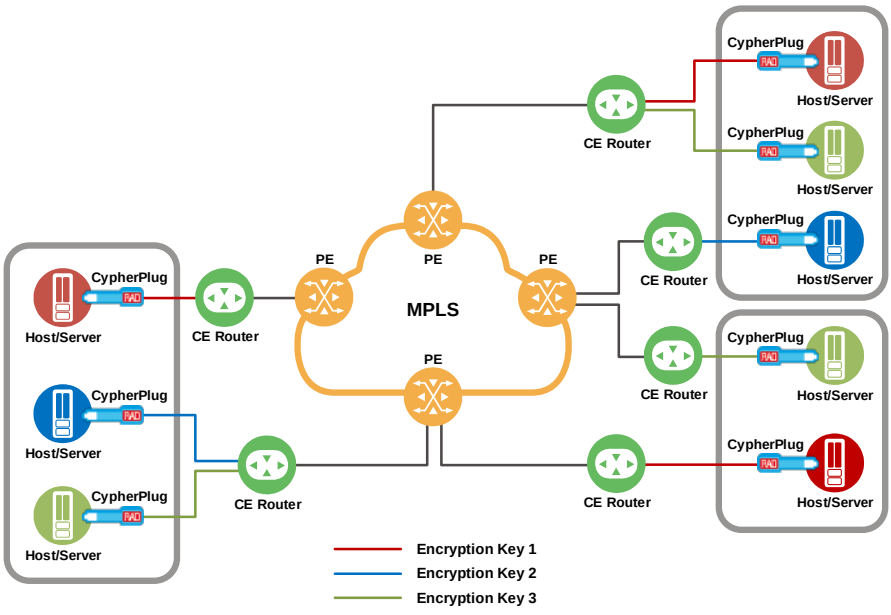

Figure 1. Encrypted Traffic over IP Network

CypherPlug

Miniature Network Security Device

Data Sheet

GENERAL

Environment

Operating Temperature	-20 to 85°C (-4 to 185°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Relative Humidity	Up to 90%, non-condensing

Power

Power Supply	Receives power from host device
Power Consumption	1.2W without SFP

Physical

Height	12.7 mm (0.50 in)
Width	14.3 mm (0.56 in)
Depth	81.1 mm (3.19 in)
Extending from chassis	37.3mm (1.47 in)
Weight	30.0 g (1.0 oz)

Ordering

RECOMMENDED CONFIGURATION

CYPHERPLUG/GE/IPSEC

Miniature network security device

SPECIAL CONFIGURATIONS

Please contact your local RAD partner for configuration options.

OPTIONAL ACCESSORIES

SFP-CA.2

Adapter for connecting CypherPlug to a PC

Transceivers

For the list of available transceivers, see the **Pluggable Transceivers data sheet** at **www.rad.com**

Note: *It is strongly recommended to order this device with* ***original*** *RAD SFPs* ***installed****. This will ensure that prior to shipping, RAD has performed comprehensive functional quality tests on the entire assembled unit, including the SFP devices. RAD cannot guarantee full compliance to product specifications for units using non-RAD SFPs.*

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