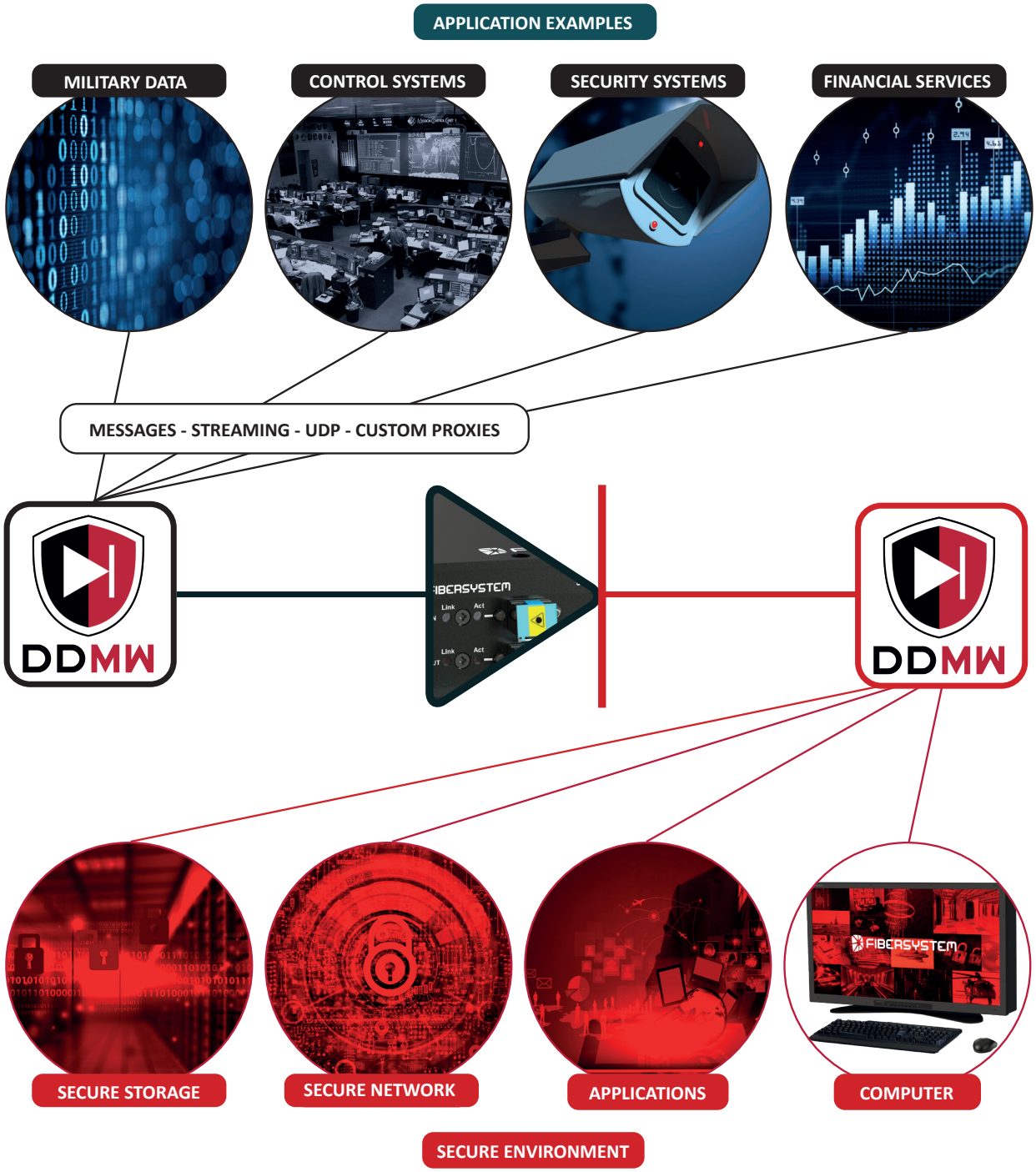
FIBERSYSTEM

Datasheet



Fibersystem Data Diode Middleware (DDMW)

The primary problem with uni-directional Ethernet data links is that no acknowledge information from a receiving system can be transferred back to the sender, so the sender has no way of knowing if the data it sent has been received. The workaround for this issue is to send and receive data in a controlled manner to avoid data loss.

The Data Diode Middleware (DDMW) is a software solution for transferring data over data diodes in such a controlled manner. It consists of a sender node and a receiver node which communicate through a uni-directional ethernet Data Diode (see page 3).

DDMW supports three kinds of transfer types; messages, streams and UDP. Messages are any type of data with a finite and predefined length, like files and command instructions. Streams are data which either do not have an end or which do not have a predetermined length, such as an audio or video stream.

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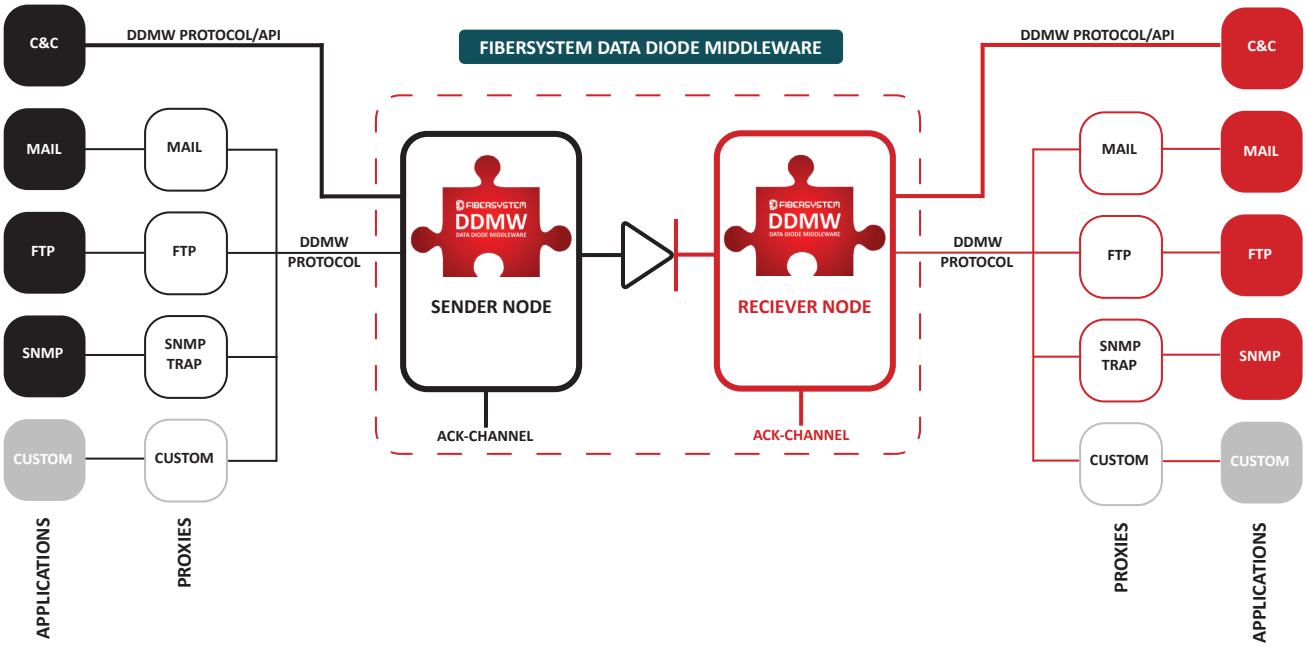
DDMW Features

- Easy-to-use integration interface
- Administrative role separation
- Separate front end/external and back end/internal systems
- Full unidirectional system separation
- Uncomplicated interface for SCADA application integrations
- High-assurance separation of security domains
- Separated role interfaces
- Separated administrator role permissions
- Hardware enforced unidirectionalness (with Fibersystem Data Diodes)
- Transaction logs for traceability



DDMW Functionality

- Transfers are interleaved
- Adjustable sender packet count, size and pace to allow environment specific optimisations
- Configurable redundancy
- Heartbeat packets can be used to make sure link is up (and alert if heartbeats are missed)
- Management interfaces to the sender and receiver nodes allow integration with monitoring systems
- Each transfer is hashed and verified on the receiver node
- “Immediate mode” allows transfer of large messages to begin immediately rather than wait for the entire message to arrive at the sender node
- Queue management
- Logging

DDMW Applications

- DDMW API
- File transfer
- Folder transfer
- UDP pass through
- SMTP (email) proxy
- The customer may implement their own protocol using DDMW APIs or command line interfaces

UDP Pass Through

The purpose of the “UDP pass through” DDMW application (“proxy”) is to handle large UDP packets. The packet size (MTU) is supposed to be set in the operating system of the DDMW nodes. The DDMW application “UDP pass through” supports splitting of such packets into smaller packets on the sender node to pass them safely through the Data Diode and then reassembling them again at the receiver node.

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SW and HW requirements

Technical overview
The sender and receiver nodes are delivered as software installation packages for common operating systems.

DDMW sender/receiver node OS
- Windows
- Linux
- Ubuntu 18.04 LTS
- Others on request

Limitations
The sender and receiver nodes are delivered as software installation packages for common operating systems.
- The DDMW sender and receiver node must run the same kind of operating system, e.g. Linux - Linux or Windows - Windows
- The Linux version of DDMW has a significantly higher performance (throughput) compared to Windows on the same hardware configuration

DDMW HW
The DDMW (hardware) nodes should have a dedicated network interface reserved for DDMW only, i.e. at least two physical network interfaces.

DDMW HW (recommended)
- Midrange XEON
- 16 GB RAM
- INTEL NIC
- SSD disk or better PCI-E SSD

Order information

Description	Partnumber
Data Diode Middleware (DDMW)	60-00-7367
Data Diode Middleware Support and Maintenance 12 months	60-00-7510
Data Diode Middleware Support and Maintenance 24 months	60-00-7511
Data Diode Middleware Support and Maintenance 36 months	60-00-7512
Data Diode 100 Mbps (60-00-7304) and DDMW 3 months license	60-00-7513
Data Diode 100Mbit (60-00-7304) + DDMW + Support and Maintenance 3+12 months	60-00-7514

For information about Fibersystem Data Diodes, see www.fibersystem.com/data-diodes

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