



**STANDARD MAINTENANCE AGREEMENT**

This Software Maintenance Agreement (“**Agreement**”) is entered into and effective as of the date set forth below (“**Effective Date**”) by and between McCain, Inc., a California corporation (“**Licensor**”) and the customer identified below (“**Customer**”).

This Agreement consists of this signature page, the Quote – Initial Order, and the Software Maintenance Agreement.

Each party has read, understands and agrees to the terms and conditions of this Agreement.

**Effective Dates:** when PO is received – 6 year duration

Accepted by:

**MCCAIN, INC.**

**CUSTOMER: THE CITY OF** OLYMPIA, WA

By: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Address for Formal Notice:

2365 Oak Ridge Way

Vista, CA 92081

Attn: \_\_\_\_\_

Address for Formal Notice:

City of Olympia Public Works

1401 Eastside St. SE

Olympia, WA 98501

Attn: \_\_\_\_\_

**APPROVED AS TO FORM:**

  
\_\_\_\_\_  
**City Attorney** (bca)

**PLEASE SIGN AND RETURN THIS AGREEMENT TO MCCAIN, INC. AND RETAIN A COPY FOR YOUR RECORDS.**



**QUOTE**

November 8, 2018

From: Ray Laigo  
 McCain Inc.  
 2365 Oak Ridge Way  
 Vista, CA 92081

Attn: Randy Wesselman  
 City of Olympia, WA - Public Works  
 1401 Eastside St. SE  
 Olympia, WA 98501

Reference: Quote #RL041018 - Olympia, WA - 6 Yr. Software Maintenance Agreement ('18-'24) revC (revised 11-8-18)

Dear Mr. Wesselman

McCain is pleased to provide this quotation on the following item(s):

Item	Qty	Unit	Description	Unit Cost	Ext. Cost
1	1	Lump	Transparency TMS License for up to 100 locations and 6 Yr. Software Maintenance*	\$81,400.00	\$81,400.00
				<b>Total</b>	<b>\$81,400.00</b>

<p>* Agreement begins on date of PO receipt. Paid in annual installments according to the following billing schedule:</p> <p>• <b>Year 1 - \$33,765 and includes:</b></p> <ul style="list-style-type: none"> <li>• Amortized payment for Transparency TMS licenses (60% discount)</li> <li>• Installation and configuration of Transparency TMS software</li> <li>• New system map implementation for whole system</li> <li>• System database conversion for up to 100 locations (convert QuickNet Pro config and history SQL database to Transparency SQL database)                             <ul style="list-style-type: none"> <li>- this does NOT include timing conversions from 170/2070 legacy controller software to 2070 ATC Omni eX software</li> </ul> </li> <li>• Onsite ATC controller training (1 day)</li> <li>• Onsite Omni training (1 day)                             <ul style="list-style-type: none"> <li>- this INCLUDES training on timing conversions</li> </ul> </li> <li>• Onsite Transparency TMS training (1 day)</li> <li>• Onsite Demonstration Test (1 day)</li> <li>• Discounted 1 Yr. Support &amp; Maintenance agreement to include twenty (20) hours of telephone, email, or remote support and 4 maintenance sessions.</li> </ul> <p>• <b>Years 2-6 - \$9,527 (annually) and includes:</b></p> <ul style="list-style-type: none"> <li>• Amortized payment for Transparency TMS licenses (60% discount)</li> <li>• Discounted 1 Yr. Support &amp; Maintenance agreement to include twenty (20) hours of telephone, email, or remote support and 4 maintenance sessions. (45% Discount)</li> </ul> <p>Each year will be paid separately. Continued use of the Transparency TMS system will be contingent upon payment of annual maintenance contract. An annual PO will be issued per the schedule established in this quote.</p>
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**Scope Notes:**

1. All labor is remote unless indicated otherwise. VPN or internet access is required to provide remote support.
2. Agency is responsible for ensuring that communications and detection is operational.
3. Agency is providing the traffic server hardware. Does not include custom intersection graphics or timing conversions.
4. All software will be made available through remote download only.
5. Training and testing are consecutive days. McCain requires at least 4 weeks notice on onsite work.

**Quote Notes:**

1. Discounted pricing is only available through sole-source purchase of amortized maintenance plan.
2. All prices are in US Dollars. All payments to be made in US Dollars.
3. Purchase orders are required to be broken out by line item.
4. Prices firm for 30 days. Tax and freight are not included.
5. Sale is subject to McCain's standard terms and conditions.

**Quotation prepared by:**

Ray Laigo  
 ITS Project Manager  
 McCain, Inc.

cc: Jim Fauconnier, Northwest Sales, McCain Inc.  
 cc: Mike Trevino, Account Manager, McCain Inc.  
 cc: Federico Hormozi, Director of ITS Solutions, McCain Inc.

The information contained in this document is intended only for the person or entity to which it is addressed and may contain confidential and/or legally privileged material. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited. If you received this in error, please contact the sender and delete the material from any computer.

## SOFTWARE MAINTENANCE AGREEMENT

### 1. DEFINITIONS

“Software Upgrades” means a major version upgrade of the Software released by Licensor before or during the term of this Agreement to add a new product or new and different functions or to increase the capacity of the Software to process information, for which there is a separate charge. An Upgrade would be an increment on the whole number portion of the build version e.g. 1.5 to 2.0. Software Upgrades are not covered under Maintenance.

“Software Updates” are maintenance software releases, bug fixes, and patches to the Software, including minor version releases of the Software. An Update would be an increment on the decimal number portion of the build version e.g. 1.5 to 1.6.

If a question arises as to whether a product offering is a Software Upgrade or Software Update, Licensor’s opinion shall prevail, provided that Licensor treats the product offering as a Software Upgrade for its end user customers generally.

“Software Upgrades” and “Software Updates” do not include optional/add-on Software Modules.

### 2. TECHNICAL SUPPORT

Maintenance includes a certain number of technical support hours and is restricted to the scope defined by this Agreement. Unless otherwise identified in the Quote, the number of technical support hours included with annual Maintenance fees is **twenty (20) hours** a year or **one hundred and twenty (120) hours** for the life of the agreement. Specific technical support items covered by this Agreement include:

- **Software Workstation Installations** – Often existing workstations are replaced and/or repaired in a manner that removes the Software client from the computer. These workstations may be re-installed by a member of Licensor’s ITS Solutions Group under the terms of this Agreement.
- **Traffic Data Collection** – Licensor’s ITS Solutions Group can configure data collection parameters and schedule operations to gather System Detector and Count Detector data. With system detector data, link congestion can also be configured for display on system maps.
- **Communication Error Diagnostics** – There are many factors involved in establishing solid communication with an intersection. When experiencing lag or complete failure when attempting to communicate with a new or existing intersection, Licensor staff can diagnose the communication sent and received by the central system. Communication diagnostics include:
  - Interpretation of CommError Logs
  - Analysis of Baud Rate vs. Polling Frequency
  - Verification of Communication Addressing Parameters
  - Identification of troubled intersections/controllers
  - Identification of TCP/IP Network configuration issues

\*Evaluation of Interconnect (such as fiber optic cabling) and third party communication devices is not covered by this Agreement.

\*\*Travel expenses and labor costs for field diagnostics are not covered by this Agreement.

- **SQL Server Database Maintenance** – SQL Server maintains the system and history database for all devices configured in the Software. The performance of SQL Server can impact the Software central system and should be reviewed from time to time. The following activities are covered by this Agreement and are performed during scheduled maintenance only:
  - Backups/Archives of SQL Server Data\*
  - Purging of SQL Tables
  - Review of SQL Server Performance/Optimization Plans

\*Does not relieve Customer of obligation to perform routine backups.

- **Local Controller Software Support** – The ITS Solutions Group will provide an understanding of local controller software and how each feature operates in the field, which may include reviewing an issue with newly produced coordination timing or providing suggestions on logic and special events.
- **Ongoing Training** – New employees, consultants, or existing staff, may require refresher training or brief walkthrough to ensure the Customer’s team is sufficiently trained on the operation of the Software. Customer can exchange its remaining support hours for technical training. Additional hours of training can be purchased via a separate contract.

\*Travel expenses for onsite training are not covered by this Agreement.

- **Software Maintenance** – As a part of Maintenance, the following services will be performed by Licensor **up to four (4) times a year** using the remote access connection.
  - Review software versions of all Software used by Customer to determine whether version updates are due, and if so perform the necessary updates.
  - Review event logs, etc. and advise management regarding any issues as requiring attention.
  - Review general system status including communications with field devices, work stations, etc. and provide a report to management, if necessary, regarding any issues.
  - Review maintenance on SQL database.
  - PDF report to include work performed, issues found and fixed, and any proposed action for Customer.
  - Review other issues to ensure compliance with the terms and conditions of this Agreement.

Additional technical support time will be available to Customer at an **hourly rate of \$150.00 plus applicable travel expenses**. Technical support is offered through Licensor’s ITS Solutions Group and is available during normal business hours of 8:00 AM PDT to 5:00 PM PDT, Monday through Friday. Technical support is provided to Customer on a “best efforts” basis with a response time of 48 hours.

### 3. LOCAL CONTROLLER FIRMWARE SUPPORT

When new Licensor local controller firmware is deployed, the central software will require updates to enable communication to these new programs. Maintenance includes Software Updates to firmware for the latest local controller technology generally released by Licensor.

#### **4. EXTENDED WORKSTATION LICENSING**

During the term of this Agreement and to the extent that any support hours remain under this Agreement, Customer is authorized to expand the number of Software workstations.

#### **5. SOFTWARE UPDATES**

When Licensor, at its sole discretion, releases Software Updates, Licensor shall supply such Software Updates to Customer with a valid Software Maintenance Agreement free of charge. Such Software Updates will be provided by Licensor when Licensor makes them generally available to the market. It is Licensor's policy to utilize the Internet and remote support technology for software distribution. Customers requiring CD-media and/or hard copies of documentation will be responsible for CD-media, hard copies of documentation, and shipping costs. All Software Updates provided, including Documentation and program materials, are subject to this Agreement. Purchase of Maintenance does not in any way extend, modify, or enhance the original Software product warranty. Software Upgrades are not provided with the Software Maintenance Agreement and are sold separately pursuant to a separate Quote.

#### **6. EXCLUSIONS FROM MAINTENANCE**

Licensor is not obligated to provide Maintenance in the following situations:

- the Software has been changed, modified, altered repaired, damaged or deleted (excluding modifications and repairs made by or under the direct supervision of Licensor);
- the problem is caused by Customer's negligence, misuses, abuse, hardware malfunction or other causes beyond the reasonable control of Licensor;
- the problem is with third-party software not licensed through Licensor;
- use of the Software in an environment, in conditions, in a manner or for a purpose for which Software was not intended or designed or failure to maintain in accordance with Licensor's instructions, specifications or the applicable Documentation;
- use of the Software in combination with any non-Licensor apparatus, data or programs outside of the official Software specifications;
- Customer has not installed and implemented Software Updates;
- installation, relocation, operation or use of the Software other than in accordance with Licensor's official specifications and the applicable Documentation;
- Customer has not paid the Maintenance fees when due; or
- Customer's breach of or noncompliance with any provisions of this Agreement.

#### **7. MAINTENANCE RENEWAL AND TERMINATION**

A Maintenance renewal Quote shall be provided to Customer fifteen (15) to thirty (30) days prior to the expiration of this Agreement. The Maintenance renewal Quote includes the Maintenance renewal dollar amount and billing information. The Maintenance is considered renewed once payment is received. If the Maintenance has not been renewed after expiration date, this Agreement shall automatically be terminated without any action of Licensor. Customer must have the current version of the Software in order to purchase or renew the Maintenance. In the event that Customer elects not to renew Maintenance, reinstatement fees may apply at the time Customer reinstates Maintenance at Licensor's then-current rates therefor. In any event, Licensor shall have no obligation to support or maintain any version of the Software except (a) the then-current version of the Software, and (b) the immediately preceding version of the Software for a period of six (6) months after it is first superseded.

## 8. CONDITIONS FOR PROVIDING MAINTENANCE

Licensor's obligation to provide Maintenance is conditioned upon the following:

- Customer immediately notifies Licensor of any errors with reasonable detail of the nature and circumstances surrounding the error.
- Customer makes reasonable efforts to solve the reported problem after consulting with Licensor;
- Customer provides Licensor with sufficient information and resources to correct the reported problem either at Licensor's customer support center or via remote access\*\* at Customer's site, as well as access to the personnel, hardware and any additional software involved in discovering the problem;
- Customer promptly installs all Software Updates; and
- Customer procures, installs and maintains all equipment, telephone lines, communication interfaces and other hardware necessary to operate the Software.

\*\*On-line / Remote technical support - the following requirements must be met:

- Software server or workstation **must have internet access** to download the local Citrix go-to-assist software.
- Allow Licensor's support staff to utilize software called Go-to-Assist by Citrix or similar software on the Software server or workstation.

WITH RESPECT TO ANY ERRORS REPORTED BY CUSTOMER TO LICENSOR, LICENSEE AGREES THAT LICENSOR'S SOLE AND EXCLUSIVE OBLIGATION AND LICENSEE'S SOLE AND EXCLUSIVE REMEDY UNDER THIS AGREEMENT WITH RESPECT TO MAINTENANCE IS FOR LICENSOR TO USE COMMERCIALY REASONABLE EFFORTS TO CORRECT SUCH ERRORS IN ACCORDANCE WITH LICENSOR'S SUPPORT OBLIGATIONS PURSUANT TO THIS SOFTWARE MAINTENANCE AGREEMENT.

# Transparency® TMS

## Traffic Management System



Cabinets  
Controllers  
Signals  
Signs  
**Software**  
Specialty

### Overview

Transparency® Traffic Management System (TMS) enables transportation professionals to proactively manage traffic flow and promote mobility through real-time traffic data collection and management tools. Built around user input and decades of industry expertise, the modern architecture of *Transparency* TMS is designed to meet the demands of today's transportation network and adapt with your needs as they evolve. With a simple, yet powerful means of collecting and displaying information, and access to data anytime, anywhere; *Transparency* TMS will take your traffic operations to new heights.

### Benefits

- Monitor system-wide traffic conditions and devices
- Command innovative control strategies
- Analyze performance and trends
- Enable proactive management
- Centralize documentation and inventory control
- Ensure system integrity through data validation
- Boost accountability through user security, controller and activity logs
- Connect communities and jurisdictions
- Enable connected vehicle applications

### Product Description

*Transparency* TMS provides dependable monitoring and control of signalized intersections in small and large environments. Intuitive and user-friendly, *Transparency* TMS is easy to learn, use, and customize; allowing it to quickly be implemented and mastered.

The newest release of *Transparency* TMS offers support for connected and autonomous vehicle (CAV) applications and data subscriptions. Additionally, *Transparency* TMS opens the door to cloud-based hosting and integration with other jurisdictions and community outreach programs.

Designed in compliance with NTCIP standards and featuring built-in support for select legacy firmware, *Transparency* TMS offers agencies a viable and cost-effective migration path to modern technology.

Best of all, robust data collection and control strategies help reduce congestion and harmful emissions in accordance with requirements for federal and state funding initiatives.

**Transparity TMS is a powerful combination of standard-compliant technology, advanced algorithms, and tried-and-true methodology.**

## Standard Compliance

Developed based on the latest national protocols to ensure the system will evolve with your needs over time. Adheres to NTCIP 1201, NTCIP 1202, TMDD, and underlying base standards.

## Device Compatibility

Compatible with 170, 2070, NEMA TS 1 and TS 2, and ATC controllers running NTCIP-compliant local control software and select 170 and 2070 traffic controller programs. Permits integration with IP-enabled devices such as CCTV cameras, battery backup systems (BBS), EV preemption devices, and traffic signal monitors (CMU/MMU).

## System Architecture

Windows-based application using client-server architecture, .NET framework, and MS SQL Server database.

Using the latest in web services, *Transparity* TMS opens the door for interoperability with web and mobile clients. Providing the foundation for efficient and reliable center-to-center data exchange and secure methods for exposing the operational status of traffic systems to external networks.



To learn more about McCain's Integrated Traffic Solutions, please contact [info@mccain-inc.com](mailto:info@mccain-inc.com) or call (760) 727-8100

## System Functionality

### Monitor System-Wide Traffic & Devices

- Survey traffic conditions remotely
- Monitor system-wide device status in real-time
- Log detailed intersection operations
- Receive instant notifications of device or traffic performance issues
- Record user activity and controller access

### Analyze Traffic Trends

- Measure performance for individual intersections and coordinated systems
- Generate reports on current or historic trends, and performance measures
- Analyze vehicular, pedestrian, EV preemption, and transit signal priority data
- Integrate with FHWA high-resolution event reports

### Implement Control Strategies

- Command controller TOD operations
- Modify phase sequence and pattern in response to specific traffic conditions
- Reduce congestion and increase efficiency
- Implement adaptive signal control strategies

### Manage Assets, Tasks & Users

- Schedule controller operations, device log retrieval, and event notification from one central scheduler
- Consolidate system-wide information in central database
- Track assets and inventory
- Enforce system security through unique user permissions
- Reduce inefficiencies and issues related to mismanagement of controller timing
- Verify and validate timing parameters

### Connect Users, Agencies & Devices

- Support inter-jurisdictional data exchange and control strategies in regional deployments
- Integrate NTCIP-compliant devices
- Enable multiple data subscription services for CAV applications

## Customer Support

McCain's ITS Solutions group provides support from system selection through integration, ensuring end-to-end functionality.

Ongoing support is available with online user groups and trainings. Comprehensive software maintenance plans offer feature upgrades, technical support, and quarterly maintenance, including back-ups and updates.



## TERMS AND CONDITIONS OF SALE

This agreement is between McCain, Inc. extending credit ("Seller") and the Applicant named below ("Buyer"). These terms and conditions along with the terms and conditions on Seller's invoice and delivery ticket which are incorporated by reference (together referred to as "TERMS") represent the entire agreement between the parties. No other terms, including those on Applicant's purchase order which are different, may add to, modify, supersede or otherwise alter the TERMS without express written approval signed by an officer of the Seller. All other terms are hereby rejected.

All references in this document to "Seller" shall include each subsidiary or division of McCain, Inc. whether or not specifically identified herein.

Payment terms are net thirty (30) days from date of invoice. Delinquent accounts shall bear interest at one and one half percent (1 1/2) percent per month. If applicant is in default for non-payment, then in addition to other remedies, Applicant agrees to reimburse Seller for all costs of collections, including reasonable attorney's fees. If Seller believes in good faith that Buyer's ability to make payments may be impaired or if Buyer shall fail to pay any invoice when due, Seller may suspend delivery of any pending order or any remaining balance thereof until such payment is made or cancel any order or remaining balance thereof, and Buyer shall remain liable to pay for any products already shipped and all non-standard products ordered by Buyer. Seller will not be held liable for any liquidated or other damages resulting from suspension or cancellation of orders.

Seller shall not be liable for failure to fulfill its obligations herein or for delays in delivery due to causes beyond its reasonable control, including, but not limited to, acts of God, natural disasters, acts or omissions of other parties, acts or omissions of civil or military authority, Government priorities, changes in law, material shortages, fire, strikes, floods, epidemics, quarantine restrictions, riots, war, acts of terrorism, delays in transportation or inability to obtain labor or materials through regular sources. Seller's time for performance of any such obligation shall be extended for the time period of such delay or Seller may, at its option, cancel any order or remaining part thereof without liability by giving notice of such cancellation to Buyer.

The validity, performance and all matters relating to the interpretation of this agreement will be governed by the laws of the State of California. Applicant and Seller agree that any legal action brought by either party as a result of the account or business relationship between Applicant and Seller shall be brought in the State and/or Federal Courts located in San Diego County, California. Each party consents to the jurisdiction and venue of such courts and waives any right it may otherwise have to challenge the appropriateness of such forum. Buyer/applicant hereby waives any objection it/he/she may have to either venue and/or jurisdiction whether personal and/or subject matter, and buyer/applicant specifically consents to both the jurisdiction and venue of either the State and/or Federal Courts located in San Diego County State of California.

No modification or alteration of these provisions shall result by Seller's shipment of goods following receipt of Purchaser's purchase order or other documents containing provisions, terms or conditions in addition to, or in conflict with, or inconsistent with these provisions. There are no terms, conditions, understandings or agreements other than those stated herein, and all prior proposals and negotiations are merged herein.

Seller reserves the right to adjust listed prices to prices in effect at the time of shipment. All prices are subject to change without notice. Please telephone our sales department for a current quotation.

All shipments will be F.O.B. shipping point unless otherwise stated on seller's quotation. Seller will not ship in any special manner or insure shipments against loss or damage unless requested by the Buyer in writing, and then at Buyer's expense. Delivery dates are approximate and are not a guaranty of any particular delivery date. If shipments are postponed more than thirty (30) days due to request or fault of the Buyer, Seller will not guaranty storage. In the event Seller agrees to store, goods will be stored at Buyer's risk and expense.

Seller warrants to buyer that goods and services sold for use (except when used for personal purposes) hereunder will be free from defects in material and workmanship which appear within one (1) year of the date of shipment to the original buyer, provided that buyer notifies seller in writing of the defects covered by this warranty within thirty (30) days of their first appearance. Seller's maximum obligation is to repair or replace goods which are proved to be defective. All warranty work is performed at factory.

This limited warranty is made only as to those components manufactured solely by the seller. Components of or accessories for equipment furnished by seller but manufactured by other manufacturers shall carry whatever warranty, if any, such manufacturers have conveyed to seller and which can be passed on to buyer.

**THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND THERE ARE NO OTHER WARRANTIES, ORAL OR WRITTEN, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. AFTER EXPIRATION OF THE WARRANTY PERIOD ALL LIABILITY TO BUYER CEASES.**



Seller will not under any circumstances, whether as a result of breach of contract, breach of warranty, tort or otherwise be liable for consequential, incidental, special or exemplary damages including, but not limited to, loss of profits or revenues, loss of use or damage to any associated equipment, cost of substitute products or services, downtime costs or claims of buyer's customers.

Seller's liability, if any, on any claim of any kind for any loss, damage or otherwise arising out of, resulting from or concerning any respect of this agreement or the goods or services furnished hereunder shall not exceed the price of the specific product which gives rise to the claim.

Seller will not be subjected to any liability, whether in contract, warranty, tort or otherwise, on any claim for loss or damage concerning products, parts, advice, assistance or service which Seller furnished to Buyer as a business courtesy, but not required hereunder.

Seller shall have no responsibility or liability for goods which have been misused, inadequately maintained or stored, or incorrectly or negligently installed or serviced.

Should Applicant and/or Applicant's end user export or re-export any commodities, technology or software from the United States, Applicant or Applicant's end user understands and agrees that Applicant or Applicant's end user must comply with Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

Backcharges. Should Buyer believe that circumstances arise requiring a backcharge, then Buyer should complete a Request For Backcharge Form in writing and submit it to Seller for approval. In no instance shall monies be withheld without prior written approval of the backcharge by Seller. Should additional materials, labor or other expenses be required, a written cost estimate shall accompany the Request for Backcharge. Under no circumstances shall the value of a negotiated backcharge exceed the face value of the product supplied by Seller.

Applicant certifies that it is solvent and capable of meeting its obligations hereunder, and that all information provided to Seller (including Applicant's financial statements) is true, accurate and complete. Applicant and each Guarantor authorize McCain, Inc. to request credit reports, including consumer credit reports, regarding their respective commercial or personal credit and otherwise to investigate their respective creditworthiness before extending credit now or at anytime in the future.

Signature \_\_\_\_\_ Printed Name \_\_\_\_\_ Date \_\_\_\_\_

Signature \_\_\_\_\_ Printed Name \_\_\_\_\_ Date \_\_\_\_\_

**APPROVED AS TO FORM:**

  
\_\_\_\_\_  
**City Attorney** (OCA)  
*Olympia*



A Company of the SWARCO Group

While the 170 controller was designed for use in 1200 baud serial environments, the McCain 2070 ATC natively supports Ethernet communication with built-in Ethernet ports for communication via any external device via Ethernet. i.e. serial to Ethernet converter in signal cabinet such as Enable-IT, Actelis, Siemens/Ruggedcom, gridconnect or MOXA devices. These are all commonly used devices in the traffic industry with success in converting existing copper interconnect infrastructure to Ethernet within the traffic signal cabinet. These devices allow not only traffic signal controller communication but also allow communication to any other Ethernet device in the cabinet, i.e. CMU, BBU, CCTV, etc.

With the *Omni eX* controllers being installed to satisfy technology growth, the amounts of data being processed between controllers and central systems has dramatically increased. One of the main hurdles with large data is NTCIP dynamic objects within *OMNI eX* and the way that *OMNI eX* sets up those objects. Today, each time that a controller running *OMNI eX* comes online, from either a fresh communication install or from a quick offline online event, the software must re-initialize these dynamic objects. Communications can drop several times over the course of a day due to various reasons. Communications drops cause a very large spike in data transfer and 1200 baud serial com just does not handle these spikes. The solution being Ethernet com as it is able to handle the high data load with ease. The data load coming from the software is able to spike and lull without overloading the com channels utilizing Ethernet and will not drag the system down to a stop and showing a complete offline display from the controller.

#### Advanced operations

*Omni eX* is equipped with two significant advanced modes of signal synchronization: Adaptive Signal Control and Peer-to-Peer Synchronization.

Unlike traditional FREE operations, FREE with Peer-to-Peer Synchronization provides a means of synchronizing the start of arterial through movements by passing signal state messages to each controller over the Ethernet network (Peer-to-Peer). This operation is ideal for use when volumes are not high enough to justify the use of common cycle lengths between intersections (coordinated), but while it is desirable to reduce stops between intersections. Peer-to-Peer operation is ONLY operational over Ethernet communications due to the volume of data passing and speed necessary to pass and collect data between controllers.

When combined with the *Transparity* traffic management system, *Omni eX* is capable of running coordinated adaptive signal control. This mode of operation automatically recalculates the signal timing patterns within a coordinated group of controllers. Adaptive signal control dramatically reduces the need for engineers to generate new signal timing plans while providing real-time improvements in arterial progression.

#### Performance measures

Beyond the collection and display of traditional MOE's such as "split monitor" and "detector volume", *Omni eX* and the McCain 2070 ATC are together able to collect high resolution data. High resolution data makes it possible to capture every detail that occurs at the intersection down to 1/10<sup>th</sup> of every second, making it possible to better characterize roadways, improve signal operations, and identify discrepancies and/or issues in signal timing.

Phone 760-727-8100

Fax 760-727-8184

[www.mccain-inc.com](http://www.mccain-inc.com)

2365 Oak Ridge Way // Vista, California 92081 // USA

## Attachment "A"

**Project name:** City of Olympia, WA. Washington State Contract #04616

**Ship to address:**

**ATTN: David Rosen**

**Fax #**

**PHONE#**

**Quotation Date**

11-1-18

**Salesperson**

**JIM FAUCONNIER**

**Inquiry Date**

**Project Number:**

ESTIMATED SHIPPING	SHIP VIA	F.O.B. POINT	TERMS
Signal Equipment: 45-90 days Cabinet Equipment: 90-120 days	Best Way	Destination	

QTY.	P/N #	DESCRIPTION	EACH	TOTAL
42	M46541	Upgrade McCain 2070ATC WSDOT /CalTrans QPL WSDOT List \$3,160.00	\$2,539.00	\$106,638.00
37	M66391	Existing 2070E upgrade to 2070ATC LINUX CPU List \$1,513.00	\$756.00	\$ 27,972.00
79	Omni-Rev.	Upgrade McCain Omni-eX or 2033 ATC Intersection Local Software TSP/FYA	\$1,100.00	\$ 86,900.00
77	ED3575-622	ED3575-622 Hardened (-40°C - 75°C) Managed Switch with 2 VDSL2 Ethernet Extender ports. 6 10/100TX, + Gigabit SFP Combo + 2 Copper Pair VDSL2 Ports. Din Rail or Panel Mount. Terminal Block power connector, redundant 12 - 48VDC power input.		
21	ED3541-00B	ED3541-00B Hardened (-40°C - 75°C) VDSL2 Ethernet Extender with 1 10/100TX Port to 1 Pair of straight or twisted copper wire. Din Rail or Panel Mount. Terminal Block power connector, power input range 12 - 48VDC		
3	ESS-008	ESS-008 8 Hour time block of EtherWAN Support Services. Includes an 8hours time block for remote EtherWAN Support Services to assist customers with product and network configuration for their application.		\$113,982.00

**Note:** McCain Inc. is Not responsible for the layout, design, installation or remote/onsite technical support of the EtherWan product or any modification to McCain supplied hardware or software to interface to support the EtherWan product. All RMA's equipment replacements or Trade-ins are the responsibility of EtherWan and will be processed directly with the City of Olympia.

EtherWAN ESTIMATED SHIPPING COST

\$550.00

McCain SHIPPING INCLUDED

N/C

Sub-Total

\$336,042.00

SALES TAX 8.9%

\$29,907.74

\*\*\* The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or legally

**TOTAL**

**\$365,949.74**

Privileged material. Any review, retransmission, dissemination or other use of, or taking any action in reliance upon, this information by persons or

entities other than the intended recipient is prohibited. \*\*\*

If you received this in error, please contact the sender and delete the material from any computer.

McCain Traffic Supply, Inc. is pleased to submit the above quotation for your consideration. Should you place an order, be assured it will receive our prompt attention. **This quotation is valid for 30 days.** Thereafter it is subject to change without notice.



## **Traffic Controller and Cabinet Warranty**

McCain controllers and cabinets are covered by a (2) two year limited warranty from the date of purchase. McCain warrants its products to be free of defects in workmanship and/or material. McCain will repair or replace any units found to be defective within the first (24) twenty-four months from the date of delivery.

McCain's warranty will cover full replacement of defective products for the first (12) twelve months. After the first (12) twelve months it is up to McCain's discretion whether the material will be replaced or repaired at no cost to the customer.

Before returning any products, the customer must call their McCain Representative or Account Manager @ 760-727-8100. The McCain representative will at that time record the date, description of problem, issue the RMA #, and then make the appropriate arrangements for the return of the product. The purchaser must prepay all freight, insurance and other transportation charges to send the product to McCain for warranty-coverage verification, repair or replacement, and, if found to be defective, McCain will return replacement / repaired product to the purchaser freight paid. McCain retains all replaced parts or products.

This warranty does not cover (1) product advice or assistance that McCain furnishes as a courtesy, (2) removal or reinstallation of products, (3) defects or damage as a result of accident, modification, misuse, improper service or repair, abuse or abnormal use including, without limitation, improper storage and incorrect installation, (4) acts of God or nature, exposure to casualty of elements. In all such cases the warranty is immediately null and void.

In no event shall this warranty run to OEM or component part buyers. All replacement products are warranted only for the remainder of the original warranty of the product replaced. Replacement products will be equivalent in function, but not necessarily identical to the replaced product.

This warranty is exclusive of all other warranties, expressed or implied, and McCain hereby specifically disclaims all other warranty claims of any type; including without limitation, a warranty of merchantability of any unit or its fitness for any particular use or purpose. In no event shall McCain be liable for interruption of business loss, profits or indirect or consequential damages, injury to person or damage to property from any cause whatsoever.

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For the most up-to-date information, please contact McCain

Phone 760-727-8100

Fax 760-727-8184

[www.mccain-inc.com](http://www.mccain-inc.com)

2365 Oak Ridge Way // Vista, California 92081 // USA



## Standard Warranty

McCain products (other than controllers and cabinets) are covered by a (1) one year limited warranty from the date of purchase. McCain warrants its products to be free of defects in workmanship and/or material. McCain will repair or replace, at our discretion, any units found to be defective within the first (12) twelve months from the date of delivery.

Before returning any products, the customer must call their McCain Representative or Account Manager @ 760-727-8100. The McCain representative will at that time record the date, description of problem, issue the RMA #, and then make the appropriate arrangements for the return of the product. The purchaser must prepay all freight, insurance and other transportation charges to send the product to McCain for warranty-coverage verification, repair or replacement, and, if found to be defective, McCain will return replacement / repaired product to the purchaser freight paid. McCain retains all replaced parts or products.

This warranty does not cover (1) product advice or assistance that McCain furnishes as a courtesy, (2) removal or reinstallation of products, (3) defects or damage as a result of accident, modification, misuse, improper service or repair, abuse or abnormal use including, without limitation, improper storage and incorrect installation, (4) acts of God or nature, exposure to casualty of elements. In all such cases the warranty is immediately null and void.

In no event shall this warranty run to OEM or component part buyers. All replacement products are warranted only for the remainder of the original warranty of the product replaced. Replacement products will be equivalent in function, but not necessarily identical to the replaced product.

This warranty is exclusive of all other warranties, expressed or implied, and McCain hereby specifically disclaims all other warranty claims of any type; including without limitation, a warranty of merchantability of any unit or its fitness for any particular use or purpose. In no event shall McCain be liable for interruption of business loss, profits or indirect or consequential damages, injury to person or damage to property from any cause whatsoever.

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7/18/2018

Mr. Dave Rosen  
City of Olympia  
PO Box 1967  
Olympia, WA 98507

RE: McCain Technical Product Support

Attn: City of Olympia, WA.

Technician: Brian Lewis

McCain Inc. – February 2014 to Present  
Office 503-362-1054  
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[blewis@mccain-inc.com](mailto:blewis@mccain-inc.com)

Siemens Inc. Roadway and Mobility – May 2007 to February 2014  
General Foreman, Operations Manager Southern Region USA

City of Grapevine, TX – January 2006 to May 2007  
Sr. Signal Tech, Traffic Signal Maintenance and Repair

City of Grand Prairie, TX – March 2002 – December 2006  
Signal Tech

U.S. Navy – July 1996 to March 2002  
Gas Turbine Electronic Mechanic

Bachelor of Arts, Business Administration and Management

IMSA Level 3 Certification  
IMSA Past Executive Board Member  
IMSA Administrator

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# ATC eX 2070 Controller

Cabinets

**Controllers**

Signals

Signs

Software

Specialty



## Overview

McCain's ATC eX 2070 Controller is an advanced, multi-application controller that simultaneously supports multiple software applications through a single platform. Designed from the ground-up based on ATC 5.2b standard, the ATC eX 2070 Controller provides revolutionary flexibility and control. The controller is available as a new 2070 style controller with the 2070 ATC CPU module already installed or as a direct, plug-in replacement for the 2070-1B CPU module. This allows end users to upgrade existing intersections to a modern, high-performance platform by either replacing the entire controller or by just replacing the 2070-1B CPU module in an existing 2070 installation with the 2070 ATC CPU module and upgrading an NTCIP compliant local control software.

## Benefits

- Provides means to easily upgrade 170 or 2070 controllers/cabinets without the need to replace cabinet hardware
- Supports multiple vendor application software through robust, open-architecture Linux platform
- Minimizes hardware requirements at intersections with multi-tasking ability
- Connects in any environment through a wide variety of communication options
- Meets ATC 5.2b standards

## Product Description

The McCain ATC eX 2070 Controller is a revolutionary, multi-application controller designed in full compliance with the ATC 5.2b standard.

The controller features a wide variety of communications options, including a standard 3-port hardened switch, four USB ports, serial, and Ethernet, for secure connectivity in any kind of environment. Quick data transfers, firmware upgrades, and log retrievals can be done via USB.

Each controller is built to McCain's stringent manufacturing standards, ensuring long-lasting performance in all environments.

The controller's Linux operating system provides a robust, flexible, open-architecture platform that can support application software from multiple vendors.

# ATC eX 2070 Controller

## Standard Features

### Operating system

- Linux

### Modules (standard, included)

- 2070 ATC CPU module
- 2070-2B or 2070-2E Field I/O module
- 2070-3B LCD front panel module
- 2070-4A Power supply

### Microprocessors

- Freescale PowerQUICC II Pro microprocessor

### Memory

- 16MB Flash memory
- 128MB DDR RAM (expandable)
- 2MB Non-volatile SRAM

### Backup Real-Time Clock (RTC)

### Applicable standards

- ATC 5.2b
- Caltrans TEES (where applicable)
- NTCIP base standards (where applicable)



2070 ATC CPU module

## Interfaces

### Communication interfaces

- SDLC ports (2)
- Serial (asynchronous) (4)
- ENET 1: 100 Base-T Ethernet switch, 1 uplink, and 3 additional ports
- ENET 2: 100 Base-T Ethernet port dedicated for local communications (i.e. laptop or similar)
- USB ports (2)

### Front panel interface

- Display: 8 lines x 40 characters
- Keyboard: 3 x 4 navigation and 4 x 4 data entry keypads

### Cabinet interfaces

- Rear connectors C1S, C11S, C12S

## General Specifications

Dimensions: 7" H x 19" W x 13" D  
(rounded to the nearest inch)

Form Factor: EIA rack mount compatible

Power: 89 VAC to 135 VAC, 60 Hz ( $\pm 3$  Hz)

Environment: Operating Temperature:  $-37^{\circ}\text{C}$  to  $+74^{\circ}\text{C}$   
Humidity: 0 to 95% (non-condensing)

Weight: 12 lbs ( $\pm$  based on module configuration)

## Options

- 256MB DDR memory expansion
- Optional modules
  - 2070-4A-220 international voltage power supply: 190VAC to 253VAC, 50 Hz ( $\pm 3$  Hz)
  - 2070-6A Dual 1200 baud modem
  - 2070-6B Dual 9600 baud modem
  - 2070-7A Dual RS232 serial ports
  - GPS module

To learn more about  
McCain's Integrated Traffic  
Solutions, please contact  
[info@mccain-inc.com](mailto:info@mccain-inc.com) or  
call (760) 727-8100



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# Omni eX<sup>®</sup>

## Intersection Control Software for ATC Controllers

Version 1.10

Cabinets  
Controllers  
Signals  
Signs  
**Software**  
Specialty



### Overview

McCain's Omni eX<sup>®</sup> intersection control software is a modern, standards-compliant program for ATC traffic controllers. Capable of operating Model 2070 and NEMA-based ATC platforms and interfacing with any style cabinet – Caltrans, NEMA TS 2 Type 1 and Type 2, ITS, and ATC cabinets – the revolutionary software provides a single solution for any infrastructure. It also easily integrates with McCain's Transparency<sup>®</sup> Traffic Management System, enabling complete ITS functionality by controlling all NTCIP-compliant devices through a single system and user interface.

### Benefits

- Provides a single solution for any controller/cabinet configuration
- Complies with national industry standards including NEMA, ATC, and NTCIP
- Assigns inputs and outputs, programmable logic and available custom NEMA D connectors without cumbersome external wiring or relays
- Supports a 16-line screen with simultaneous display of status and menus
- Ensures data accuracy and consistency with built-in data validation

### Product Description

Omni eX intersection control software provides comprehensive, signalized intersection control for ATC standard traffic controllers, including Model 2070 and NEMA-based configurations.

Capable of handling any intersection, from simple to complex, the NTCIP-compliant software accommodates up to 16 vehicle and 16 pedestrian phases, each with an equal number of overlaps, 250 coordination patterns and 128 local detectors. In accordance with the latest MUTCD standards, it can also accommodate protected/permitted left turns with a flashing yellow arrow (PPLT FYA).

Powerful logging and data collection, including measures of effectiveness (MOE), are uploadable locally via USB or to a central management system.

## Standard Features

### Phases

- 16 volume/density vehicle phases
- 16 pedestrian phases
- 4 rings
- Automatic barrier calculation based on compatible phases
- Variable phase sequence
- Exclusive pedestrian-phase operation
- Alternate timing for special vehicles, bicycles or pedestrians
- Advanced and delayed walk
- Texas diamond operation
- 32 output channels
- 4 unique sets of phase timing and options selectable by pattern

### Overlaps

- 16 vehicle overlaps
- 16 pedestrian overlaps
- Negative (excluded) vehicle and pedestrian phases
- Delayed start of green
- Flashing yellow or red arrow overlaps
- Detector call phases and locking
- 4 unique sets of overlap configurations selectable by pattern

### Coordination

- 250 free or coordinated patterns
- Automatic or manual permissive
- Fixed or floating force off
- Reference beginning or end of green
- Change virtually all operational parameters by pattern
- 16 phase sequence selection by pattern

### Cabinet Inputs and Outputs

- Supports all cabinet types
- Individually assignable input and output functions (I/O mapping)
- Internal multi-input Boolean logic gates with delay, extend and latch, and flashing output features
- 16 generic alarm inputs
- 16 special functions
- External pattern selection
- Pulsing preempt and transit priority input discrimination

### Detection

- 128 local/system detectors
- Single or dual detector speed calculation
- Phase assignments configurable per detector, multiple phases per detector
- Direct detector actuation for vehicle and pedestrian overlaps
- All NTCIP detector options
- Delay and extend timing
- Alternate passage, minimum green and pedestrian timing detection
- Vol/Occ configurable per detector
- Detector failure monitoring configurable by time-of-day
- Connect directly to video detection

### Communications

- Supports all industry standard comms
- Fully NTCIP 1201 and 1202 compliant (mandatory and optional objects)
- NTCIP MIB and block objects for all vendor-specific parameters
- Data validation during download
- Network time client and/or server
- GPS, WWV, NMEA, and NTP time synchronization
- California AB3418E with master function for time and pattern broadcast
- USB for database upload/download, firmware upgrades, log retrieval
- Peer to peer sharing of I/O between intersections
- Web browser support
- Connected vehicle SPaT interface

### Preemption

- 8 preemption sequences
- Each sequence configurable for railroad or emergency vehicle operation
- Definable priority and linking
- User configurable overlap enable/disable during all preempt intervals
- Flashing and limited service options
- User assignable status options

### Transit Priority

- Estimated time of arrival
- 16 priority strategies in 4 sets, selectable by pattern
- Options to support any type of vehicle detection
- Configurable headway and preempt lockout times
- Queue jump
- Intelligent phase time adjustment based on expected vehicle arrival
- Remotely actuation or enable/disable of priority strategies
- Support for user configurable special logic and advanced operations
- Programmable logic for advanced TSP applications

### Time-of-Day Scheduler

- 64 schedules
- 64 day plans
- 48 events
- 128 actions
- Operational parameters changeable by time-of-day

### Logs

- High resolution logging
- Extensive event log for management and diagnostic purposes
- Cycle-based measures of effectiveness
- Detector volume, occupancy and speed
- Speed trap data
- NTCIP global reporting conformance group for user-defined event logging
- User access logs

To learn more about  
McCain's Integrated Traffic  
Solutions, please contact  
[info@mccain-inc.com](mailto:info@mccain-inc.com) or  
call (760) 727-8100



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# 2070 Controller Modules

Cabinets

**Controllers**

Signals

Signs

Software

Specialty

CPU Modules  
I/O Modules  
GPS Time Sources  
Front Panel Displays  
Power Supplies  
NEMA Adapter  
Chassis



## Overview

McCain manufactures a variety of 2070 Controller Modules in full compliance the California Department of Transportation (Caltrans) Transportation Electrical Equipment Specifications (TEES). By combining these modules, customers can easily configure model 2070 controllers to meet their specific needs.

## Benefits

- Easily upgrades current intersection hardware
- Rugged and reliable modules
- Modern, efficient designs
- Modular design for a variety of configuration options

## Product Description

McCain 2070 Controller Modules, based on the module(s) and software control package utilized, control applications that include: intersection control, ramp metering, variable message signs, sprinklers, pumps, and changeable lane control.

Permitted by the modular design of 2070 controllers, McCain modules facilitate matching the hardware configuration to your individual requirements.

McCain offers a variety of 2070 modules that can easily upgrade your existing equipment to meet your overall Intelligent Transportation System (ITS) goals without the need to purchase new cabinets.

# 2070 Controller Modules

## CPU Module

CPU modules contain the controller's operating system, microprocessor, memory, and essential computing devices.

2070-1B	TEES 2002, OS-9 RTOS, 8MB PSRAM, 8MB flash memory, 2MB non-volatile SRAM, up to 5 SDLC ports, up to 7 ACIA ports, 10MBPS Ethernet port
2070-1E	TEES 2009, OS-9 RTOS, 32MB PSRAM, 8MB flash memory, 2MB non-volatile SRAM, up to 5 SDLC ports, up to 7 ACIA ports, 4 10/100MBPS Ethernet ports
2070-ATC	400 MH Core Speed, Linux OS, 128MB DDR RAM, 16MB flash memory, 2MB non-volatile SRAM, up to 5 SDLC ports, up to 7 ACIA ports, 4 10/100MBPS Ethernet ports, 2 USB ports
2070-1C	TEES 2009, Linux OS, 256MB DDR Ram, 16MB NOR flash memory, 256MB NAND flash memory, 2MB non-volatile SRAM, up to 5 SDLC ports, up to 7 ACIA ports, 3 10/100MBPS Ethernet ports, 1 USB port

## I/O Modules

I/O modules provide the physical interface between the controllers and the field equipment.

2070-2A	Field I/O Caltrans 170/ 2070 cabinets, TEES 2002
2070-2B	Field I/O NEMA TS 1/TS 2 Type 2 (with 2070-8) Field I/O ITS
2070-2E	Field I/O Caltrans 170/ 2070 cabinets, TEES 2009
2070-2N	Field I/O NEMA TS 2 Type 1

## GPS Modules

GPS time source modules provide accurate time-of-day.

2070-7G	GPS module for 2070 controllers
---------	---------------------------------



2070-7G GPS Module

To learn more about McCain's Integrated Traffic Solutions, please contact [info@mccain-inc.com](mailto:info@mccain-inc.com) or call (760) 727-8100



## Front Panel Displays

Front panels provide the physical user interface to monitor and program controllers. The backlit LCD screen displays text and can be adjusted by a contrast knob.

2070-3A	Large font LCD panel module: 4 lines x 40 characters, 3 x 4 navigation keypad, 4 x 4 data entry keypad
2070-3B	Small font LCD panel module: 8 lines x 40 characters, 3 x 4 navigation keypad, 4 x 4 data entry keypad

## Power Supply

Power supply modules provide voltage requirements as needed by other modules. AC line and EMI suppression circuitry is included.

2070-4A	Power supply module 10 A
2070-4B	Power supply module 3.5 A

## Communications Modules

Communications modules provide the interface between the controller and the central system software.

2070-6A	Dual 1200 baud modem (GDI)
2070-6B	Dual 9600 baud modem (GDI)
2070-7A	Dual RS232 serial ports
2070-7B	Dual RS485 serial ports

## NEMA Adapter

Adapters transform standard model 2070 controllers into NEMA compliant controllers.

2070-8	NEMA adaptor (with 2070-2B)
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## Chassis

Chassis house all modules to create a self-contained unit.

- 2070 chassis with serial motherboard
- Cover plate for 2070 card slot, 1x wide
- Cover plate for 2070 card slot, 2x wide

## General Specifications

Form Factor:	2070 standard
Circuit Board	.063", double-sided, FR4, solder masked, with plated through holes, gold-plated finger contacts, conformal coated
Material:	
Environment:	Operating temperature: -37°C to +74°C Humidity: 0 to 95% (non-condensing)

# ED3541 Series

Hardened 10/100BASE-TX Ethernet Extender



## Overview

The ED3541 Ethernet extender allows the extension of IP services beyond normal Ethernet distance limitations without changing cables, breaking the 100-meter Ethernet barrier.

The ED3541's hardened design features high shock and vibration, electrical noise immunity, a wide operating temperature range from -40 to 75°C, and ruggedized aluminum housing. The ED3541 is the ideal Ethernet extender for environments where connectivity is crucial.

## Spotlight

### • High Speed Performance

- Up to 100Mbps at 200 meters distance
- Up to 1Mbps at 2200 meters distance

### • Wide Operating Temperature

- -40 to 75°C wide operating temperature range design is suitable for installation in outdoor cabinets

### • UL 60950 Certification

- Certified by UL 60950-1 standard, providing protections to installers from risk of injury or damage

# Hardware Specifications

## Technology

---

### Standards

- IEEE 802.3 10BASE-T
- IEEE 802.3u 100BASE-TX
- IEEE 802.3x full duplex and flow control

### Processing Type

- Half-duplex back-pressure and IEEE 802.3x Full-duplex flow control
- Auto Negotiation
- Auto MDI/MDIX

## Power

---

### Input Voltage

- 12 to 48VDC (Terminal Block)

### Power Consumption

- 4.56W max. 0.38A@12VDC, 0.07A@48VDC

### Protection

- Over current protection
- Reverse polarity protection

## Mechanical

---

### Casing

- Aluminum case
- IP30

### Dimensions

- 42 x 90 x 100mm (W x D x H)  
(1.65" x 3.54" x 3.94")

### Weight

- 0.41 Kg (0.9 lbs.)

### Installation

- DIN-Rail (Top hat type 35mm) mounting

## Interface

---

### Ethernet Port

- Port: One RJ-45 port
- Speed: 10/100Mbps
- Distance: 100 meters (328ft.)
- Cable: 10BASE-T: UTP CAT. 3, 4, 5 (2-pair wire)  
100BASE-TX: UTP CAT. 5 (4-pair wire)

### Ethernet Extender Port

- Port: One RJ-11/Terminal Block port
- Speed: Up to 100Mbps
- Distance: 2200 meters (7217 ft.)
- Cable: Telephone wire 24 AWG  
(0.5mm diameter, 1-pair wire) or larger

### DIP-Switch

- DIP 1 Site: Auto/Loc
- DIP 2 LDR: ON/OFF

### LED Indicators

- Per Unit: Power 1, 2
- Per 10/100TX Port: Link/Activity, Full-duplex
- Line Speed: 100/80/60/40/20Mbps and Link below 20Mbps

## Speed/Distance Reference

Distance (m)	Data rate (Mbps)
200	100
400	80
600	60
800	40
...	...
2200	1

### Note:

- All speed selections are Symmetrical on the DSL and Full-duplex on the Ethernet
- The data rate will vary according to line quality

## Environment

---

### Operating Temperature

- -40 to 75°C (-40 to 167°F)  
Tested @ -40 to 85°C (-40 to 185°F)

### Storage Temperature

- -40 to 85°C (-40 to 185°F)

### Ambient Relative Humidity

- 5% to 95% (non-condensing)

## Regulatory Approvals

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### ISO

- Manufactured in an ISO 9001 facility

### Safety

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#### UL 60950-1

#### EN 60950-1

#### IEC 60950-1,

#### ISA 12.12.01

- Class 1, Division 2 group A, B, C & D for hazardous locations

### EMI

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#### FCC Part 15B Class A

#### VCCI Class A

#### EN 61000-6-4

### EMS

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#### EN 61000-6-2

- EN 61000-4-2 (ESD Standards)
- EN 61000-4-3 (Radiated RFI Standards)
- EN 61000-4-4 (Burst Standards)
- EN 61000-4-5 (Surge Standards)
- EN 61000-4-6 (Induced RFI Standards)
- EN 61000-4-8 (Magnetic Field Standards)

### Environmental Test Compliance

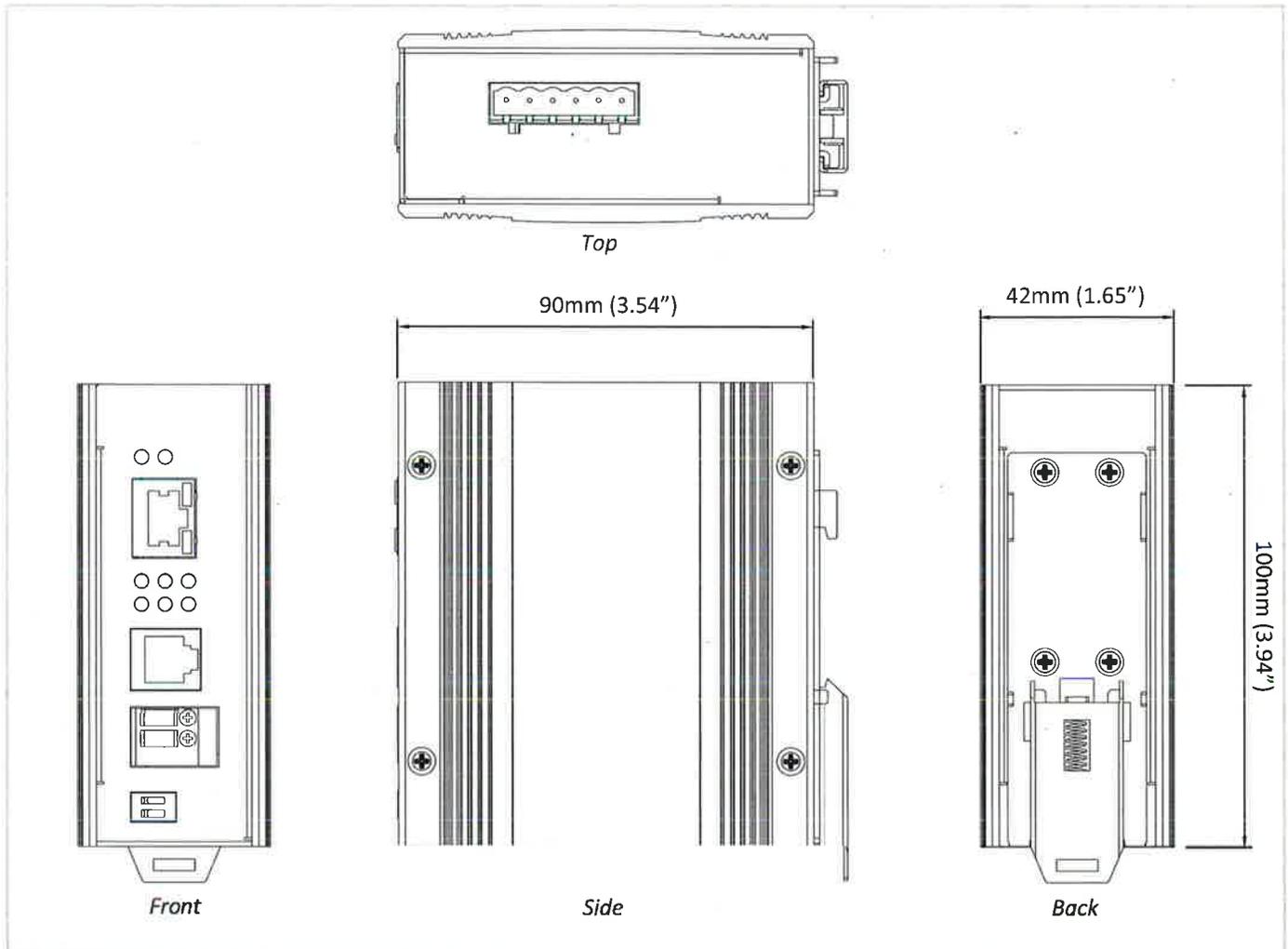
---

#### IEC 60068-2-6 Fc (Vibration Resistance)

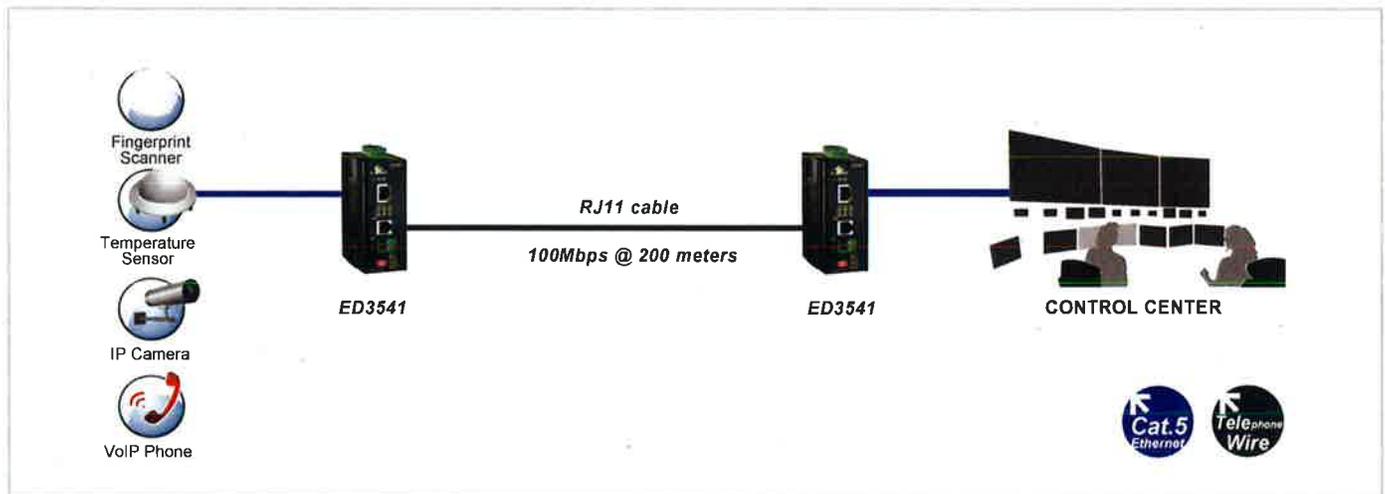
#### IEC 60068-2-27 Ea (Shock)

#### FED STD 101C Method 5007.1 (Free fall w/package)

# Dimensions



# Application Diagram



## Ordering Information

### Model

ED3541	Hardened 10/100BASE-TX Ethernet Extender
--------	--

\* DIN-Rail mounting kit included.

### Optional Accessories

DR-30-24	30W/1.5A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
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# ED3575

Hardened Managed 6-port 10/100BASE-TX +2-port Gigabit combo SFP Switch with 2-port Copper Pair Extender



## Overview

The ED3575 Managed Ethernet Switch and Extender enables the extension of Ethernet connectivity over existing copper pair cables. This allows legacy infrastructure to be leveraged for IP networks, extending the Ethernet distance limitations of 100 meters. With 6 Fast Ethernet, 2 Gigabit Ethernet, and 2 copper extender ports, the ED3575 provides excellent network extension flexibility.

Upgrading an existing legacy control or surveillance system to a new IP-based system is a complicated task, especially when existing cable infrastructure is comprised of old copper or twisted pair cables. EtherWAN's ED3575 provides Ethernet connection and extension over existing copper wire cables, eliminating the expense of pulling new cable infrastructure.

The ED3575 is built to hardened specifications, with an operating range of  $-40$  to  $75^{\circ}\text{C}$  that allows for use in extreme environments. Management via remote login provides efficient configuration changes, link status checks, and device maintenance. Running in conjunction with other managed switches, the ED3575 performs seamless OAM (Operation, Administration and Maintenance) functions. Incorporating VDSL2 technology, the ED3575's RJ11 and terminal block extender ports provide long distance transmission, with data rates of 100Mbps within 300 meters, and 1Mbps up to 2200 meters.

## Spotlight

### • Alpha-Ring Support at Optic and Extender Ports

- The Alpha-Ring protocol provides network connection redundancy (15ms recovery time not supported on extender ports)
- Provides 100Mbps transmission within 300 meters

### • Comprehensive Management and Security

- Switch management through RS-232 console, Telnet and web browser
- Supports SNMP v1/v2c/v3
- Supports VLAN, QoS, RSTP, IGMP snooping and LACP for networking applications
- TACACS+ protocol ensures secure authentication, authorization, and accounting (AAA) services

### • Wide Operating Temperature Range

- The ED3575 can be deployed in either indoor or outdoor environments, and can operate in ambient temperatures from  $-40$  to  $75^{\circ}\text{C}$

### • Dual VDSL2 Ports

- VDSL2 ports provide fixed data rate control

# Software Features

## Management

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- Interface
  - CLI, Telnet and Web Browser
  - SNMP v1/v2c/v3
- Firmware and configuration upgrade and backup via TFTP
- Supports DHCP Server/Client
- RMON (Remote monitoring): group 1, 2, 3, 9
- Port mirroring: TX/RX and both
- NTP (Network Time Protocol) time synchronization

## Security

---

- MAC address filtering
- Enable/disable port
- Storm control (broadcast and multicast types)
- IEEE 802.1x LAN access control
- Remote authentication through RADIUS
- SSH for CLI and Telnet security
- SSL for web security

## Quality of Service (QoS)

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- Priority Queues: 4 queues per port
- Traffic classification based on IEEE 802.1p CoS, DSCP, WRR (Weighted round robin)
- Rate Limiting (Ingress/Egress)

## Layer 2 Features

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- Auto-negotiation for port speed and duplex mode
- Flow Control
  - IEEE 802.3x full duplex mode
  - Back-Pressure half duplex mode
- Redundant Protocols
  - IEEE 802.1D Spanning Tree Protocol (STP)
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
  - EtherWAN's Alpha-Ring network fault recovery (<15ms) and Alpha-Chain
- VLANs
  - Port-based VLANs
  - IEEE 802.1Q Tag VLANs (4096 VID)
  - GVRP (GARP VLAN Registration Protocol)
  - GMRP (GARP Multicast Registration Protocol)
- Link Aggregation
  - Static Trunk (2 groups, support MAC base)
- IGMP Snooping
  - IGMP snooping v1/v2/v3

## Performance

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- Switching Capability: 5.6Gbps switching fabric capacity
- MAC Address Table: 8K

# Hardware Specifications

## Technology

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### Standards

- IEEE 802.3 10BASE-T
- IEEE 802.3u 100BASE-TX
- IEEE 802.3x Full duplex and flow control
- IEEE 802.1p QoS
- IEEE 802.1Q Tag VLANs
- IEEE 802.1w RSTP
- IEEE 802.1x Port-based Network Access Control

### Forward and Filtering Rate

- 14,880pps for 10Mbps
- 148,810pps for 100Mbps
- 1,488,100pps for 1000Mbps

### Packet Buffer Memory

- 2M bits

### Processing Type

- Store-and-Forward
- Half-duplex back-pressure and IEEE 802.3x full-duplex flow control

### Address Table Size

- 8192 MAC addresses

## Power

---

### Input Voltage

- 12 to 48VDC (Terminal Block)

### Power Consumption

- 15.6W Max., 1.3A@12VDC
- 13.7W Max., 0.57A@24VDC
- 13.6W Max., 0.28A@48VDC

### Protection

- Over current protection
- Reverse polarity protection

## Mechanical

---

### Casing

- Aluminum case
- IP30

### Dimensions

- 73 x 125 x 145mm (W x D x H)  
(2.87 x 4.92 x 5.7")

### Weight

- 1.25kg (2.76 lbs.)

### Installation

- DIN-Rail (Top Hat type 35mm)

## Interface

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### Ethernet Ports

- 10/100BASE-TX: 6 ports
- 10/100/1000BASE-T and 100/1000BASE-X SFP combo: 2 ports

### Ethernet Extender Ports

- RJ-11 and Terminal Block port: 2 ports
- Cable: Telephone wire 24 AWG  
(Minimum 0.5mm diameter, 1-pair wire)

### LED Indicators

- Per Unit: Power Status (Power 1, Power 2)
- Per Port RJ45: Link/Activity
- Per Extender Port: Link

## Speed/Distance Reference

Distance (m)	Data rate (Mbps)
300	100
400	80
600	60
800	40
...	...
2200	1

### Note:

- The data rate for VDSL2 ports can be preset to a fixed speed
- All speed selections are Symmetrical on the DSL and Full-duplex on the Ethernet
- The data rate will vary according to line quality

### Console Port

- Port: One DB9 RS-232 port

### DIP-Switch

- One DIP Switch: Local (CO) or Remote (CPE)

### Alarm Contact

- One relay output with current 1A@24VDC

## Environment

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### Operating Temperature

- -40 to 75°C (-40 to 167°F)  
Tested @ -40 to 85°C (-40 to 185°F)

### Storage Temperature

- -40 to 85°C (-40 to 185°F)

### Ambient Relative Humidity

- 5% to 95% (non-condensing)

## Regulatory Approvals

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### ISO

- Manufactured in an ISO 9001 facility

### Safety

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UL 60950-1, IEC 60950-1, EN 60950-1, UL 62368

### EMI

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### FCC Part 15B Class A

### VCCI Class A

EN 55022, EN 61000-6-4, EN 61000-3-2, EN 61000-3-3

### EMS

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### EN61000-6-2

- EN 61000-4-2 (ESD Standards)
- EN 61000-4-3 (Radiated RFI Standards)
- EN 61000-4-4 (Burst Standards)
- EN 61000-4-5 (Surge Standards)
- EN 61000-4-6 (Induced RFI Standards)
- EN 61000-4-8 (Magnetic Field Standards)

### Environmental Test Compliance

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### IEC 60068-2-6 Fc (Vibration)

### IEC 60068-2-27 Ea (Shock)

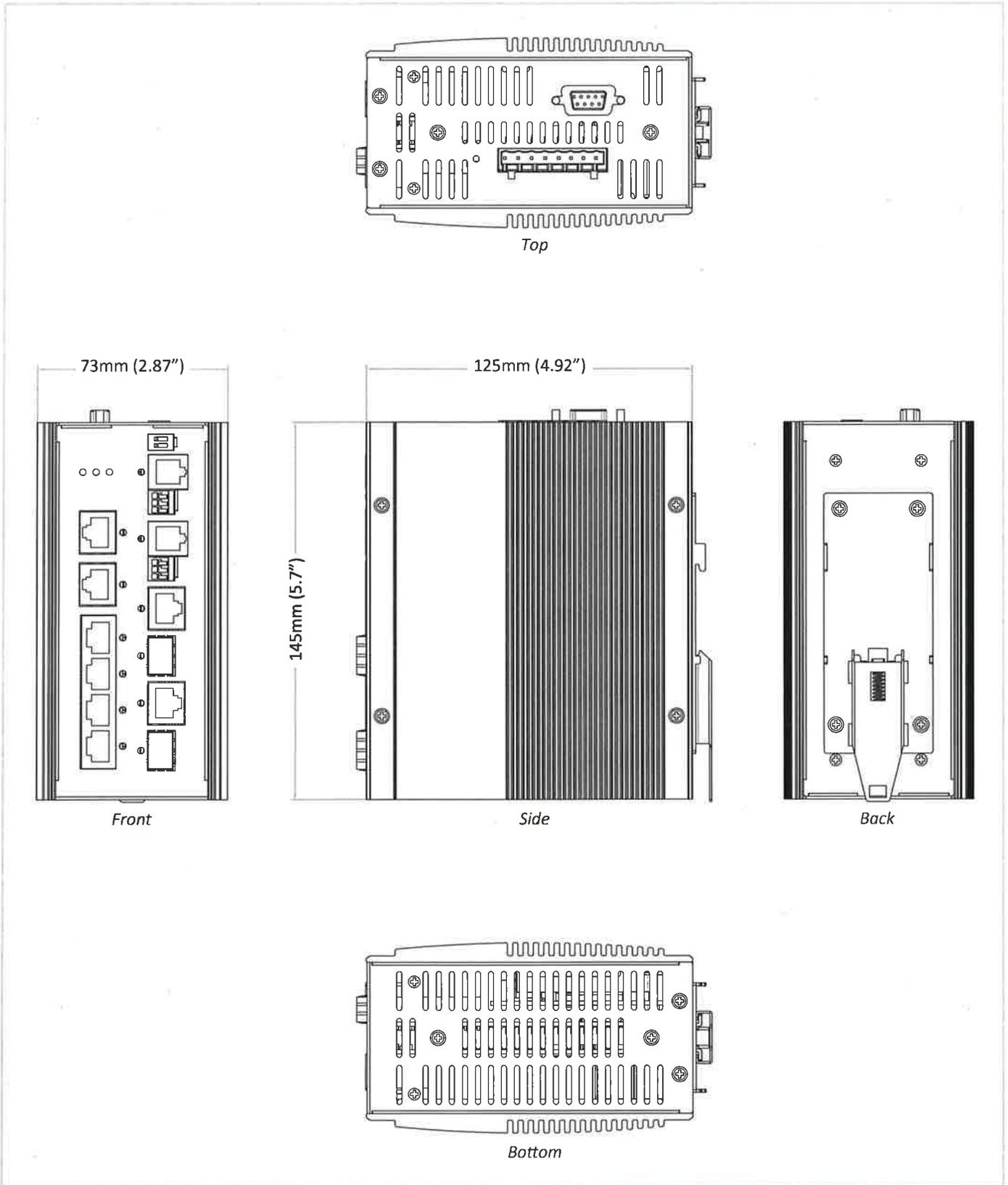
### FED STD 101C Method5007.1 (Free fall w/package)

### Industrial Compliance

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### NEMA TS2

# Dimensions



## Ordering Information

### Model

<b>ED3575-622</b>	6-port 10/100BASE-TX +2-port Gigabit combo SFP Switch with 2-port Copper Pair Hardened Managed Extender
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\* DIN-Rail mounting kit included.

### Optional Accessories

<b>DR-30-24</b>	30W/1.5A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
<b>DR-60-24</b>	60W/2.5A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
<b>DR-75-24</b>	75W/3.2A DIN-Rail 24VDC Industrial Power Supply (for Terminal Block)
<b>41-136046-X</b>	36W/3A 12VDC hardened power adapter with open wire in aluminum housing (for Terminal Block) (X) = 1: US, 2: EU, 3: UK, 4: AU, 5: JP, 6: SA

# **EtherWAN Limited Warranty Policy - Americas**

Etherwan Limited Warranty Policy January 1st, 2015  
Subject to Change without Notice  
Supersedes all previous Versions

**Etherwan Systems, Inc.**  
**2301 E Winston Rd Anaheim**  
**Anaheim, CA**  
**Attn: Customer Service Manager**

Voice:(714) 779 3800  
Fax:(714) 779 3808  
E-mail: [support@etherwan.com](mailto:support@etherwan.com)  
Weekdays 9:00 am to 6:00 pm PST

This warranty applies to all EtherWAN Branded product sales in the Americas. Effective date of this Warranty is January 1<sup>st</sup> 2015. This Warranty is retroactive for any product purchased within 6 months prior to the effective date of this warranty.

## **Hardened Product Line**

### Limited Lifetime Warranty

Seller (EtherWAN Systems, Inc.) warrants to the original End User that products furnished by the Seller will be free from defects in material and workmanship as of the date of delivery, and will conform to Seller's published technical specifications. The foregoing shall apply only to failures to meet said warranties which appear within the period of time during which the Products are installed in their original installation for the original End User and operator of such Products; provided, however, that in the event of product discontinuance, warranty support is limited to Five (5) years from the announcement of discontinuance. In the event that the seller receives notice during the warranty period that any Covered Hardware does not conform to its warranty, Customer's sole and exclusive remedy, and the seller's sole and exclusive liability, shall be for the seller, at its sole option, to either repair or replace the non-conforming Covered Hardware in accordance with this warranty. In the event that a discontinued product is unavailable and repair of the covered product is not possible, a similar product will be substituted at the seller's option.

## **Industrial Product Line**

### 5 Year Warranty

Seller (EtherWAN Systems, Inc.) warrants to the original End User that products furnished by the Seller will be free from defects in material and workmanship as of the date of delivery, and will conform to Seller's published technical specifications. The foregoing shall apply only to failures to meet said warranties which appear within a Five (5) year period of time during which

the Products are installed in their original installation for the original End User and operator of such Products; provided, however, that in the event of product discontinuance, warranty support is limited to Two (2) years from the announcement of discontinuance. In the event that the seller receives notice during the warranty period that any Covered Hardware does not conform to its warranty, Customer's sole and exclusive remedy, and the seller's sole and exclusive liability, shall be for the seller, at its sole option, to either repair or replace the non-conforming Covered Hardware in accordance with this warranty. In the event that a discontinued product is unavailable and repair of the covered product is not possible, a similar product will be substituted at the seller's option.

## **Commercial Product Line**

### **3 Year Warranty**

Seller (EtherWAN Systems, Inc.) warrants to the original End User that products furnished by the Seller will be free from defects in material and workmanship as of the date of delivery, and will conform to Seller's published technical specifications. The foregoing shall apply only to failures to meet said warranties which appear within a Three (3) year period of time during which the Products are installed in their original installation for the original End User and operator of such Products; provided, however, that in the event of product discontinuance, warranty support is limited to One (1) year from the announcement of discontinuance. In the event that a discontinued product is unavailable and repair of the covered product is not possible, a similar product will be substituted at the seller's option.

### **All Products**

The conditions of any tests shall be mutually agreed upon and Seller shall be notified of, and may be represented at, all tests that may be made. The warranties and remedies set forth herein are conditioned upon (1) proper storage, installation, use and maintenance, and conformance with any applicable recommendations of Seller and (2) Buyer promptly notifying Seller of any defects and, if required, promptly making the product available for correction.

If any product or service fails to meet the foregoing warranties, Seller shall thereupon correct any such failure either at its option, (1) by repairing any defective or damaged product or parts of the products, or (2) by making available any necessary repaired or replacement products or parts thereof. Any repaired or replacement part or product shall be warranted for the remaining period of the original Warranty Period. Buyer shall pay shipping charges to ship product to Seller's facility, Seller will pay shipping charges to ship product to Buyer. Where a failure cannot be corrected by Seller's reasonable efforts, the parties will negotiate an equitable adjustment in price. Seller will not accept any product returned without an approved RMR number assigned by Seller's customer service department. Where a product has been returned to the Seller and no fault is found the Buyer agrees to pay a predetermined fee to compensate the Seller for its cost of evaluating the product and shipping cost both ways (see Etherwan's RMA Policy).

The preceding paragraph sets forth the exclusive remedies for claims based on defect in or failure of products, whether the claim is in contract, indemnity, warranty, tort (including Seller's negligence), strict liability or otherwise and however instituted. Upon the expiration of the warranty period, all such liability shall terminate and BUYER shall have a reasonable time, within thirty days after the warranty period, to give written notice of any defects which appeared during the warranty period. The foregoing warranties are exclusive and in lieu of all other warranties, whether written, oral, implied or statutory. **NO IMPLIED OR STATUTORY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY.** Seller does not warrant any products or services of others which BUYER has designated.



A Company of the SWARCO Group

7/18/18

Mr. Dave Rosen  
City of Olympia  
Olympia, WA 98507

RE: 2070 ATC Upgrade

I certify that the materials quoted by McCain, Inc do comply with Buy America requirements.

Best Regards,

*Mike Trevino*

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