

701 DIGITAL LINK

USER HARDWARE MANUAL

0004809_REV_G

5/11/2022



EdgeTech

4 Little Brook Road
West Wareham, MA 02576

Tel: (508) 291-0057

Fax: (508) 291-2491

www.EdgeTech.com

The information, figures, and specifications in this manual are proprietary. They are issued in strict confidence on the condition that they not be copied, reprinted, or disclosed to a Third-Party, either wholly or in part, without the prior written consent of EdgeTech. Any reproduction of EdgeTech supplied software or file sharing is strictly prohibited.

Copyright © 2020-2022 EdgeTech. All rights reserved.

ATTENTION – READ THIS FIRST!

All personnel involved with the installation, operation, or maintenance of the equipment described in this manual should read and understand the warnings and cautions provided below.

CAUTION! This equipment contains devices that are extremely sensitive to static electricity. Therefore, extreme care should be taken when handling them. Standard handling precautions involve using anti-static protection materials and grounding straps for personnel.

WARNING! High voltage may be present in all parts of the system. Therefore, use caution when the electronics are removed from their containers for servicing.

CAUTION! Operation with improper line voltage may cause serious damage to the equipment. Therefore, always ensure that the proper line voltage is used.

Warnings, Cautions, and Notes

Where applicable, warnings, cautions, and notes are provided in this manual as follows:

WARNING! Identifies a potential hazard that could cause injury or death.

CAUTION! Identifies a potential hazard that could damage equipment or data.

NOTE: Recommendations or general information that is particular to the presented material.

HARDWARE VARIATIONS AND COMPATIBILITY

The 701 Digital Link contains both standard and proprietary hardware. EdgeTech may sometimes change the standard components due to their availability or performance improvements. Although the component manufacturers and their models and styles may change from unit to unit, replacement parts will generally be interchangeable.

EdgeTech will make every effort to see that replacement components are interchangeable and use the same software drivers (if applicable). At times, however, direct replacements may not exist. When this happens, EdgeTech will provide the necessary drivers with the replacement part, if applicable.

EdgeTech may also change certain hardware per customer requirements. Therefore, portions of this manual, such as parts lists and test features, are subject to change. These sections should be used for reference only. When changes are made that affect system operation, they will be explicitly noted. Also, some options and features may not be active in the customer's unit at the time of delivery. Upgrades will be made available when these features are implemented.

Contact [EDGE TECH CUSTOMER SERVICE](#) with any questions relating to compatibility.

ABOUT THIS DOCUMENT

We, the employees at EdgeTech, would like to thank you for purchasing a 701 Digital Link. At EdgeTech, our policy is to provide high-quality, cost-effective products and support services that meet or exceed your requirements. We also strive to deliver them on time and continuously look for ways to improve them. We take pride in the products we manufacture and want you to be entirely satisfied with your equipment.

Purpose of this Manual

The purpose of this manual is to provide the user with information on the setup and use of EdgeTech's 701 Digital Link. Although this manual encompasses the latest operational features of the 701 Digital Link, some features may be periodically upgraded. Therefore, the information in this manual is subject to change and should be used for reference only.

Liability

EdgeTech has made every effort to document the 701 Digital Link in this manual wholly and accurately. However, EdgeTech assumes no liability for errors or any damages resulting from the use of this manual or the equipment it documents. EdgeTech reserves the right to upgrade this equipment's features and make changes to this manual without notice.

Revision History

REVISION	DESCRIPTION	DATE	APPROVAL
F	Template Conversion, Picture, Text, BOM Updates	4/28/2020	TS
G	Updated to Latest Product Specifications	5/11/2022	AWP

WARRANTY STATEMENT

All equipment manufactured by EdgeTech is warranted against defective components and workmanship for a period of one year after shipment. Warranty repair will be done by EdgeTech free of charge.

Shipping costs are to be borne by the customer. Malfunction due to improper use is not covered in the warranty, and EdgeTech disclaims any liability for consequential damage resulting from defects in the performance of the equipment. No product is warranted as being fit for a particular purpose, and there is no warranty of merchantability. This warranty applies only if:

- i. The items are used solely under the operating conditions and in the manner recommended in the Seller's instruction manual, specifications, or other literature.
- ii. The items have not been misused or abused in any manner, nor have repairs been attempted thereon without the approval of EdgeTech Customer Service.
- iii. Written notice of the failure within the warranty period is forwarded to the Seller, and the directions received for properly identifying items returned under warranty are followed.
- iv. The return notice authorizes Seller to examine and disassemble returned products to the extent Seller deems necessary to ascertain the cause for failure.

The warranties expressed herein are exclusive. There are no other warranties beyond those, either expressed or implied herein. The Seller does not assume any other obligation or liability in connection with the sale or use of said products. Any product or service repaired under this warranty shall be warranted for the remaining portion of the original warranty period only.

Equipment not manufactured by EdgeTech is supported only to the extent of the original manufacturer's warranties.

CAUTION! If your product is a portable topside, never attempt to ship it in its case alone. Shipping portable topsides without an exterior shipping crate will void the warranty.

SOFTWARE SERVICE OVERVIEW

EdgeTech provides software services free of charge. This software agreement does not address customer-specified modifications or enhancements. These services may be ordered separately. Furthermore, EdgeTech software upgrades are meant for the sole use of EdgeTech customers. Any reproduction of EdgeTech-supplied software or file sharing is strictly prohibited.

Software Updates and Enhancements

EdgeTech customers can download new software releases with modifications and enhancements from the [EDGE TECH WEBSITE](#). Major software issues, should they occur, will be reported directly to the customer. New software releases consist of the following:

- Software enhancements that are not on the price list
- Software fixes and changes
- Product integration
- Documentation updates to online help
- Tests for compatibility with other modules

Software patches consist of software that has undergone the following:

- Minor software enhancements
- Software fixes and changes

EdgeTech customers are entitled to contact [EDGE TECH CUSTOMER SERVICE](#) by telephone, fax, or e-mail to report a difficulty, discuss a problem, or receive advice on the best way to perform a task. When contacted, EdgeTech Customer Service will do the following:

- Respond within 24 hours via Telephone, Fax, and E-mail Support
- Immediately attend to serious problems affecting operations
- Attempt to find an immediate workaround

RETURNED MATERIAL AUTHORIZATION

Before returning any equipment to EdgeTech, a Returned Material Authorization (RMA) Number must be obtained from **CUSTOMER SERVICE**.

RMA Purpose

The RMA Number identifies returned equipment when it arrives at our receiving dock and enables tracking while at our facility. Refer to the RMA number on all documentation and correspondences.

All returned materials must be shipped prepaid. Freight collect shipments will not be accepted. All equipment should be adequately insured for shipping, but equipment belonging to EdgeTech must be insured for full value.

If there is more than one item per consignment, include a packing with the shipment. An invoice can double as a packing slip only when the contents are clearly numbered and identified on the invoice.

CAUTION! Never attempt to ship a Portable Topside in its Storm Case™ alone. Although rugged, these cases are not intended to be used as shipping containers, and the delicate internal components could be damaged. Shipping in this manner will void any warranties.

NOTE: All shipping charges shall be the customer's responsibility, unless under warranty, as EdgeTech will pay for return shipping.

NOTE: For International Shipments valued over \$1000, the following Shipper's oath must be sent with the invoice.

Shipper's Oath:

"I, _____, declare that the articles herein specified are the growth, produce, or manufacture of the United States; that they were exported from the United States from the port of _____, on or about _____; that they are returned without having been advanced in value or improved in condition by any process of manufacture or any other means; and that no drawback, or allowance has been paid or admitted hereof."

Signed _____

CUSTOMER SERVICE

Customer service personnel at EdgeTech are always eager to hear from users of our products. Your feedback is welcome and is a valuable source of information to improve these products continually. Therefore, we encourage you to contact EdgeTech Customer Service to offer any suggestions or to request technical support:

NOTE: Please have your system Model and Serial Number available when contacting Customer Service.

E-mail:	service@edgetech.com
Mail:	4 Little Brook Road West Wareham, MA 02576
Telephone:	(508) 291-0057
Fax:	(508) 291-2491
24-Hour Emergency Technical Support Line:	(508) 942-8043

For more information, please go to WWW.EDGETECH.COM.

COMPANY BACKGROUND

EdgeTech (formerly EG&G Marine Instruments) traces its history in Underwater Data Acquisition and Processing back to 1966. EdgeTech has designed, developed, and manufactured products, instruments, and systems — for the acquisition of underwater data, including marine, estuarine, and coastal applications — for over 50 years.

EdgeTech responds to the needs of the Scientific, Naval, and Offshore communities by providing industry-leading equipment — such as Sub-Bottom Profilers, Side Scan Sonar, Acoustic Releases, USBL Positioning Systems, and Bathymetric Systems — that have become standards in the industry.

EdgeTech consistently anticipates and responds to future needs with an active Research and Development Program. Current efforts are focused on adapting new cutting-edge acoustic technology.

TABLE OF CONTENTS

ATTENTION – READ THIS FIRST!	iii
Warnings, Cautions, and Notes	iii
HARDWARE VARIATIONS AND COMPATIBILITY	iv
ABOUT THIS DOCUMENT	v
Purpose of this Manual	v
Liability	v
Revision History	v
WARRANTY STATEMENT	vi
SOFTWARE SERVICE OVERVIEW	vii
Software Updates and Enhancements	vii
RETURNED MATERIAL AUTHORIZATION	viii
RMA Purpose	viii
CUSTOMER SERVICE	ix
COMPANY BACKGROUND	x
TABLE OF CONTENTS	xi
LIST OF FIGURES	xiii
LIST OF TABLES	xiv
1.0 OVERVIEW	1-1
1.1 Applications	1-1
2.0 SPECIFICATIONS	2-2
2.1 701-DL Mechanical Drawing	2-4
3.0 SETUP AND ACTIVATION	3-1
3.1 Unpacking and Inspection	3-1
3.2 Installing the 701-DL	3-1
3.2.1 Connecting the 701-DL	3-2
3.2.1.1 Connecting to the 701-DL	3-2
3.2.1.2 Connecting to the 701-DL With Computer	3-3
3.2.2 701-DL Controls, Indicators, and Connections	3-4
3.2.3 701-DL with Computer Controls, Indicators, and Connections	3-6
3.3 Activating the 701-DL	3-9

3.4	Post Recovery	3-9
4.0	MAINTENANCE	4-1
5.0	TROUBLESHOOTING	5-1
5.1	701-DL Digital Link Troubleshooting Guide	5-1
5.2	701-DL with 2U Computer Troubleshooting Guide	5-2
A.0	COMPUTER SYSTEM RESTORE	A-1
B.0	PRINTERS	B-1

LIST OF FIGURES

Figure 1-1: 701-DL Rackmount Configuration	1-1
Figure 1-2: 701-DL in 2U-SKB Case.....	1-1
Figure 2-1: 701-DL Drawing	2-4
Figure 2-2: 701-DL in 2U-SKB Case.....	2-5
Figure 3-1: 701-DL Front and Back Panels	3-5
Figure 3-2: 701 With Computer Front Panel.....	3-7
Figure 3-3: 701 DL With Computer Rear Panel.....	3-8

LIST OF TABLES

Table 2-1: 701-DL Specifications2-3

Table 3-1: 701-DL Controls, Indicators, and Connections.....3-4

Table 3-2: 701 DL With Computer Controls, Indicators, and Connections3-6

Table 5-1: 701-DL Digital Link Troubleshooting Guide5-1

Table 5-2: 701-DL Rackmount Troubleshooting Chart.....5-2

1.0 OVERVIEW

The 701 Digital Link (701-DL) provides an interface between a computer running EdgeTech's Discover sonar acquisition software and an EdgeTech sonar system (tow vehicle, sonar head). The 701-DL is self-contained, with all interface and power supply electronics housed within. Communication between the computer and the 701-DL is an



Figure 1-1: 701-DL Rackmount Configuration

Ethernet LAN connection using TCP/IP protocols. The data and control interface between the 701-DL and the sonar system is via TCP/IP protocols over the ADSL link using the 701-DL Ethernet connection and ADSL modem. A Sync Trigger port provides an interface with an external TTL trigger. EdgeTech Discover software interfaces with the 701-DL, monitors and controls the attached system, and displays and records acquired sonar and sensor data. The 701-DL fits a 19-inch rack and is delivered mounted independently in a rugged 2U-SKB case or mounted with an EdgeTech-provided computer in a rugged 6U case.



Figure 1-2: 701-DL in 2U-SKB Case

1.1 Applications

The 701 Digital Link has many applications, including:

- Fisheries research
- Mine countermeasures
- Hydrographic surveys
- Cable and pipeline surveys
- Channel conditioning/clearance surveys
- Geo-hazard surveys
- Geological/geophysical surveys
- Route surveys
- Archaeological surveys
- Search and recovery

2.0 SPECIFICATIONS



701-DL DIGITAL LINK IN 2U-SKB CASE



RACK MOUNT (701-DL AND 2U COMPUTER IN 6U CASE)

Size	With 2U-SKB Case: 60.96 cm (24 in.) length 56.90 cm (22.40 in.) width 15.75 cm (6.20 in.) height	With 6U-SKB Case: 45.7 cm (19 in.) length 43.2 cm (17 in.) width 17.8 cm (7 in.) height
	Without Case: 43.2 cm (17 in.) length 48.3 cm (19 in.) width 8.8 cm (3.50 in.) height	
Weight	With 2u-SKB Case: 12.2 kg (26.8 lb.)	20.41 kg (45 lb.)
	Without Case: 7.3 kg (16 lb.)	
Case construction	Aluminum 19-inch rack mount	Aluminum 19-inch rack mount
Shipping Container Type	Carton	Durable Sealed polyurethane case
Shipping Container Size	30.5 cm (12 in.) length 61 cm (24 in.) width 61 cm (24 in.) height	50.8 cm (20 in.) length 66.0 cm (26 in.) width 71.1 cm (28 in.) height
Shipping Weight	13.2 kg (29 lb.)	47.7 kg (105 lb.)
Operating Temp.	0–45°C (32–113°F)	0–45°C (32–113°F)
Storage Temp.	-10-60°C (14-140°F)	-10-60°C (14-140°F)
Operating relative humidity	5–90% (non-condensing)	5–90% (non-condensing)
Non-operating storage relative humidity	5-90%	5-90%
Input voltage	100-264 VAC, 50/60 Hz, auto-switching	100-264 VAC, 50/60 Hz, auto-switching
Input power	200W max	200W max
Power to Towfish	400 VDC, 150W max	400 VDC, 150W max
Processor	—	Intel Core, I7, 3.6 GHz Quad-Core
Memory	—	4 GB, 1333 MHz

Data storage	—	DVD/RW drive 1-TB hard drive (data) 500-GB hard drive (OS)
Display	—	23.6-inch LCD monitor
Keyboard	—	High-impact industrial keyboard
Pointing device	—	High-impact industrial trackball
External trigger TTL		
I/O ports	(1) Ethernet (1) Trigger	(1) Ethernet (3) RS-232 (6) USB 2 (2) USB 3 (1) Trigger

Table 2-1: 701-DL Specifications

2.1 701-DL Mechanical Drawing

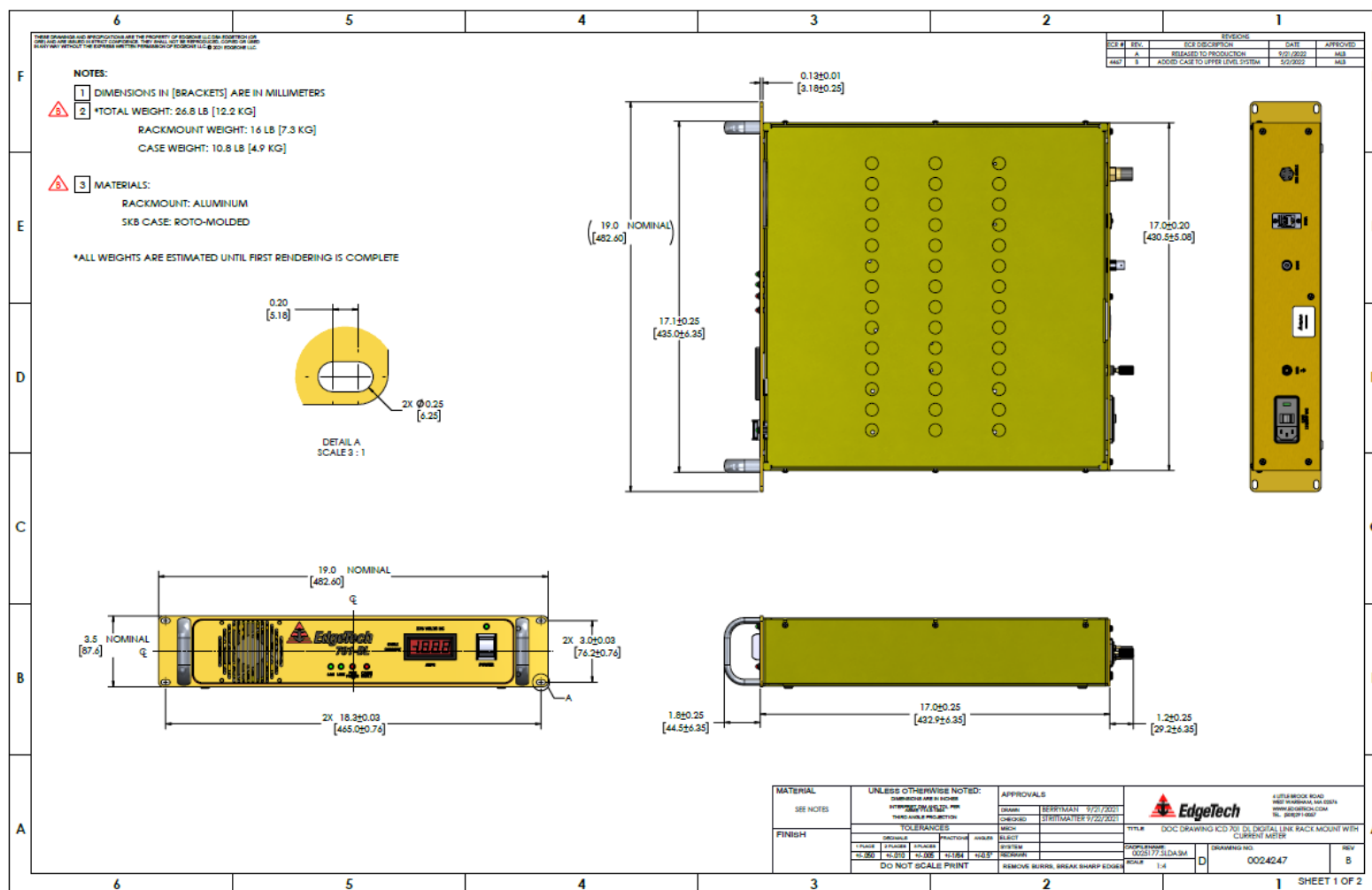
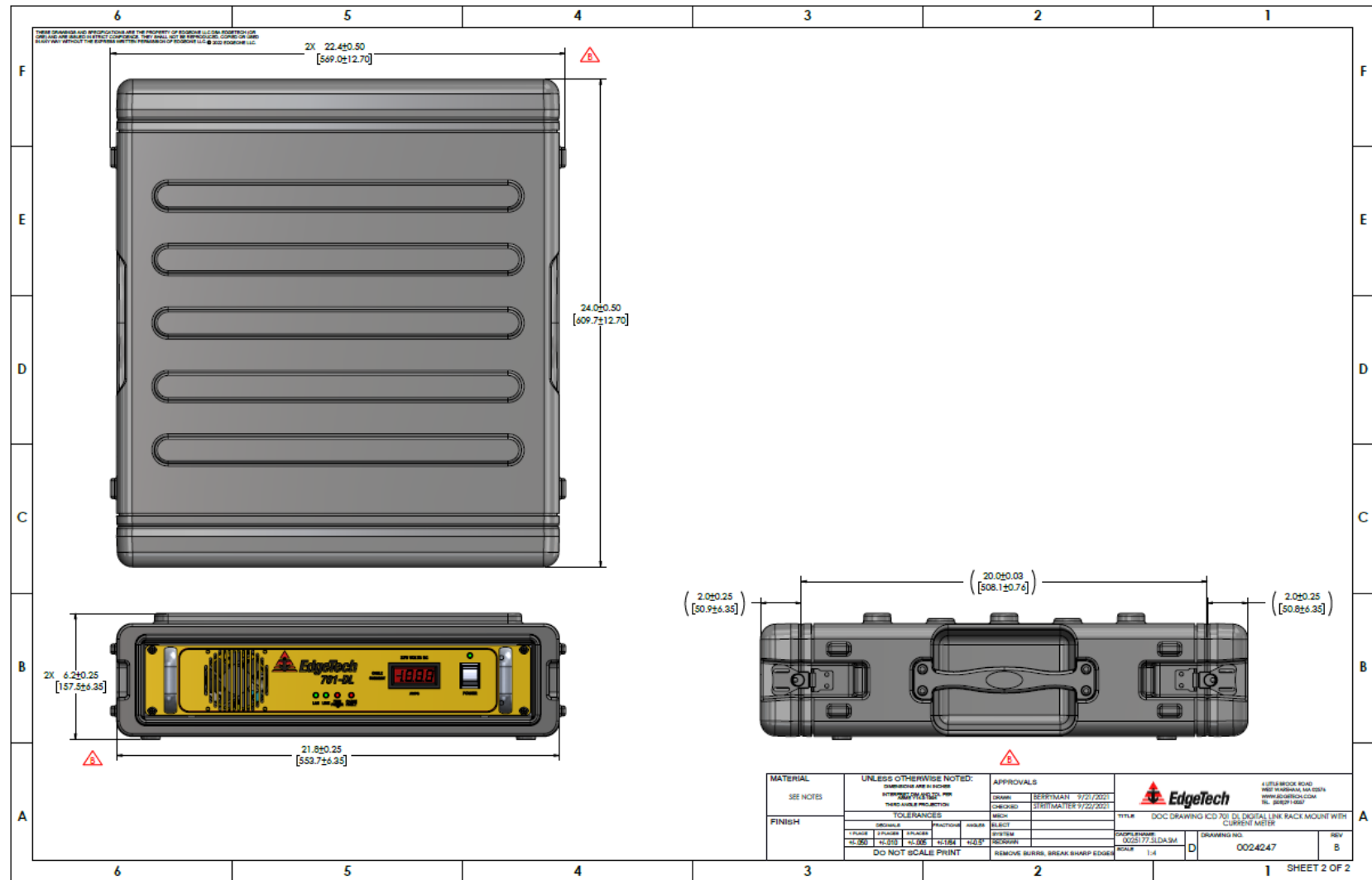


Figure 2-1: 701-DL Drawing



3.0 SETUP AND ACTIVATION

EdgeTech designed the 701 Digital Link to be easily set up and activated for operation. Instructions for this process are provided in the subsections to follow.

3.1 Unpacking and Inspection

Inspect the shipping containers for any damage before unpacking the components. Report any damage to the carrier and EdgeTech. If the shipping containers appear free of damage, carefully unpack the components and inspect them for damage. Check the packing list, verifying that all the items on the list are included. If any damage is found, report it to the carrier and EdgeTech. If any items are missing, immediately contact [EDGE TECH CUSTOMER SERVICE](#). Do not install or operate any equipment that appears to be damaged.

After unpacking the system components, store the shipping containers, including any packing materials, in a safe place for later use. When transporting or storing the system, pack all items in their original shipping containers in the same way they were originally shipped. Store the system in a dry environment when not in use.

3.2 Installing the 701-DL

The 701 DL is delivered and installed in an SKB protective case and should be located in an area free from sea spray, precipitation, and potentially damaging UV rays (sunlight). Furthermore, the unit should be located near the topside computer and in an area where the operator can see the deck crew deploying the towfish for easy communication. If desired, the 701-DL can be installed in a standard 19" rack.

3.2.1 Connecting the 701-DL

All Edgetech products are supplied with Hardware and Discover Software Manuals that provide specific connection, activation, and testing instructions for each model. You can find the latest manuals on the [EDGE TECH WEBSITE](#). General instructions for the 701-DL topside are provided below.

WARNING! Never power up the 701-DL with the tow cable disconnected from the tow vehicle. A severe electric shock could occur. This also applies to post-recovery, as disconnecting the towfish while the power is still on could result in bodily injury or death.

NOTE: The 701-DL will automatically switch off power to the towfish if the two remain disconnected for an extended period. The power will also shut off if an overcurrent or undercurrent condition exists. To reactivate the power to the towfish, turn the POWER switch off and then on again.

3.2.1.1 Connecting to the 701-DL

Refer to subsection **701-DL CONTROLS, INDICATORS, AND CONNECTIONS** for the location of the connectors while performing the steps below:

1. Verify that the 701-DL is not connected to AC power.
2. Verify that the tow cable is properly connected and attached to the towfish, and then connect the tow cable to the SEA CABLE connector.
3. Connect the Ethernet patch cable to the DATA connector of the 701-DL Digital Link and to the Ethernet connector of the computer (2U, Getac Semirugged laptop, or user-supplied). This cable may be extended up to 100 feet using a Category 5 Ethernet crossover or straight patch cable.
4. Set the IP address of your computer to 192.9.0.nnn, where nnn is any integer from 1 to 100. EdgeTech configures supplied computers to use 192.9.0.99. Do not use the reserved IP addresses: 192.9.0.22, 192.9.0.225, 192.9.0.101, and 192.9.0.102.
5. If a navigation system will be used, connect the navigation system output to an available serial communications port on the Getac, 2U, or the user-supplied computer.
6. If an external source will be used to trigger the 701-DL Digital Link, connect the trigger output of this source to the SYNC connector.
7. Connect the AC power cord to the LINE VAC connector and the AC power source.

3.2.1.2 Connecting to the 701-DL With Computer

Refer to this manual's subsection **701-DL WITH COMPUTER CONTROLS, INDICATORS, AND CONNECTIONS** for the location of the connectors while performing the steps below:

1. Verify that the 701-DL and computer are not connected to AC power.
2. Verify that the tow cable is properly connected and attached to the towfish, and then connect the tow cable to the SEA CABLE connector.
3. Connect the LCD monitor to the VIDEO CARD connector.
4. Connect the trackball to a back-panel USB connector.
5. Connect the keyboard to a back-panel USB connector.
6. If a navigation system will be used, connect the navigation system output to the COM 1 serial connector on the attached computer.
7. If an external source will be used to trigger the 4205 701-DL with a 2U CPU, connect the trigger output of this source to the SYNC BNC connector on the rear panel of the 701-DL.
8. Connect AC power cord for 2U Processor and 701DL to VAC INPUT connector and AC power source.
9. Connect an AC power cord to the LCD monitor and the AC power source.

At this point, perform any pre-deployment checks as prescribed by the towfish hardware manual, such as a rub test. Operation instructions for the topside and towfish can also be found in the supplied user manuals.

3.2.2 701-DL Controls, Indicators, and Connections

FRONT PANEL	
Digital Current Meter Display	Displays the 701-DL's fish current output.
Power Switch	This rocker switch turns the 701-DL Link on or off.
LAN Indicator Light	Green indicator. Flashes continuously when an Ethernet connection is established.
Link Indicator Light	Green indicator. Flashes while the 701-DL Digital Link is establishing a reliable communications link with the Towfish. Illuminates continuously when a reliable communications link with the Towfish is established.
Fish Power Indicator Light	Red Indicator. Indicates 400V is applied to the fish cable.
Cable Fault Indicator Light	Red indicator. Blinks 1Hz rate for missing cable or 3Hz rate for excessive current or shorted fish cable.
Power Indicator Light	Green indicator. Illuminated when the 701-DL Digital Link is on.
BACK PANEL	
Line VAC Connector	Connection for AC power cord.
Line Power Switch	Rocker switch. Switches AC power to POWER switch on the front panel of the 701-DL Digital Link.
AC Fuse	AC power fuse (PN# 0003728).
Data Connector	RJ-45 Standard Ethernet connection for connecting to the external topside processor.
Sync Connector	BNC connector provides an input connection for a TTL external trigger sent to the towfish.
Sea Cable Connector	SubConn MCBH4F female connector to sea cable going out to tow vehicle.

Table 3-1: 701-DL Controls, Indicators, and Connections

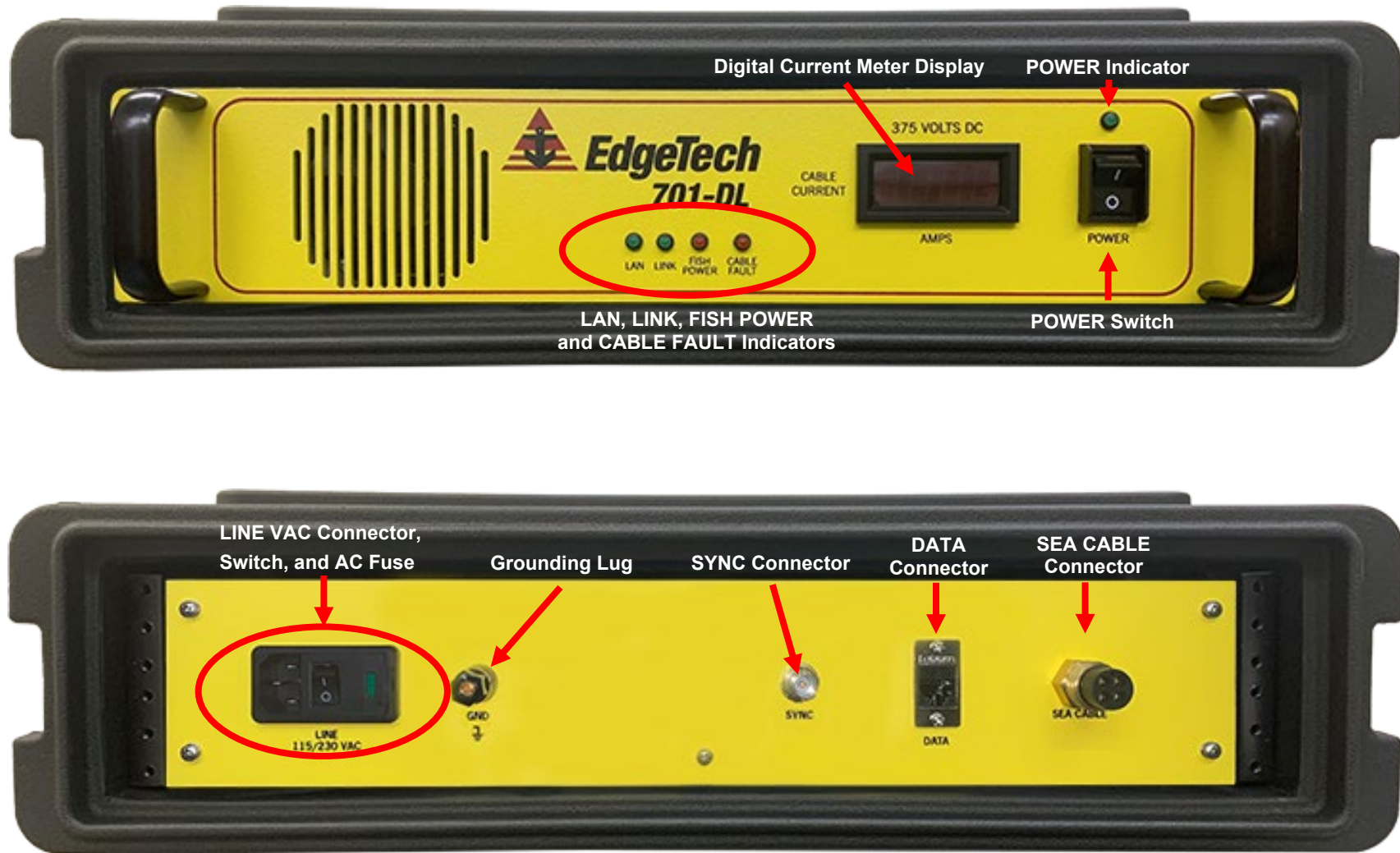


Figure 3-1: 701-DL Front and Back Panels

3.2.3 701-DL with Computer Controls, Indicators, and Connections

FRONT PANEL 701-DL	
Digital Current Meter Display	Displays the 701-DL's current output.
LAN Indicator	Green indicator light. Flashes continuously when an Ethernet connection is established.
Link Indicator	Green indicator light. Flashes while the 701-DL Digital Link is establishing a reliable communications link with the Towfish. Illuminates continuously when a reliable communications link with the Towfish is established.
Fish Power Indicator	Red Indicator light. Indicates 400V power is applied to the fish cable.
Cable Fault Indicator	Red indicator light. Blinks 1Hz rate for missing cable or 3Hz rate for excessive current or shorted fish cable.
Power Indicator	Green indicator light. Illuminated when the 701-DL Digital Link is on.
BACK PANEL 701-DL	
Line VAC Connector	Connection for AC power cord.
Line Power Switch	Rocker switch. Switches AC power to POWER switch on the front panel of the 701-DL Digital Link.
AC Fuse	AC power fuse (PN# 0003728).
Data Connector	RJ-45 Standard Ethernet connection for connecting to the external topside processor.
Sync Connector	It provides an input connection for a TTL external trigger that is sent to the towfish.
Sea Cable Connector	SubConn MCBH4F female connector to sea cable going out to tow vehicle.
Grounding Lug	Grounding Lug.
FRONT PANEL COMPUTER	
USB Connectors	(2) USB connectors. Four on the back panel and two on the front. Located on CPU.
DVD Drive	DVD\RW drive.
CPU Power & Reset Switches and Indicators	Computer Power and Reset Switches and Indicators
BACK PANEL COMPUTER	
Line VAC Connector	CEE-type AC input connector. Connects to 100-264 VAC, 50/60 Hz power.
Power Switch	Rocker switch. Turns the 2U-CPU computer on or off.
USB Connectors	(6) USB connectors. Four on the back panel and two on the front. Located on CPU.
Ethernet Connector	RJ-45 connector. It provides a 10/100BaseT Ethernet connection. Located on CPU and 701-DL.
Video card	Video card with 4 Mini DP (Display)Connectors. Provides video display to the monitor.
COM-1 NAV Connector	DB-9 female connector. RS-232 serial port that connects to the navigation system. Located on CPU.
COM-3 Connector	DB-9 female connector. RS-232 serial port that can be used to connect to the navigation system. Located on CPU.

Table 3-2: 701 DL With Computer Controls, Indicators, and Connections

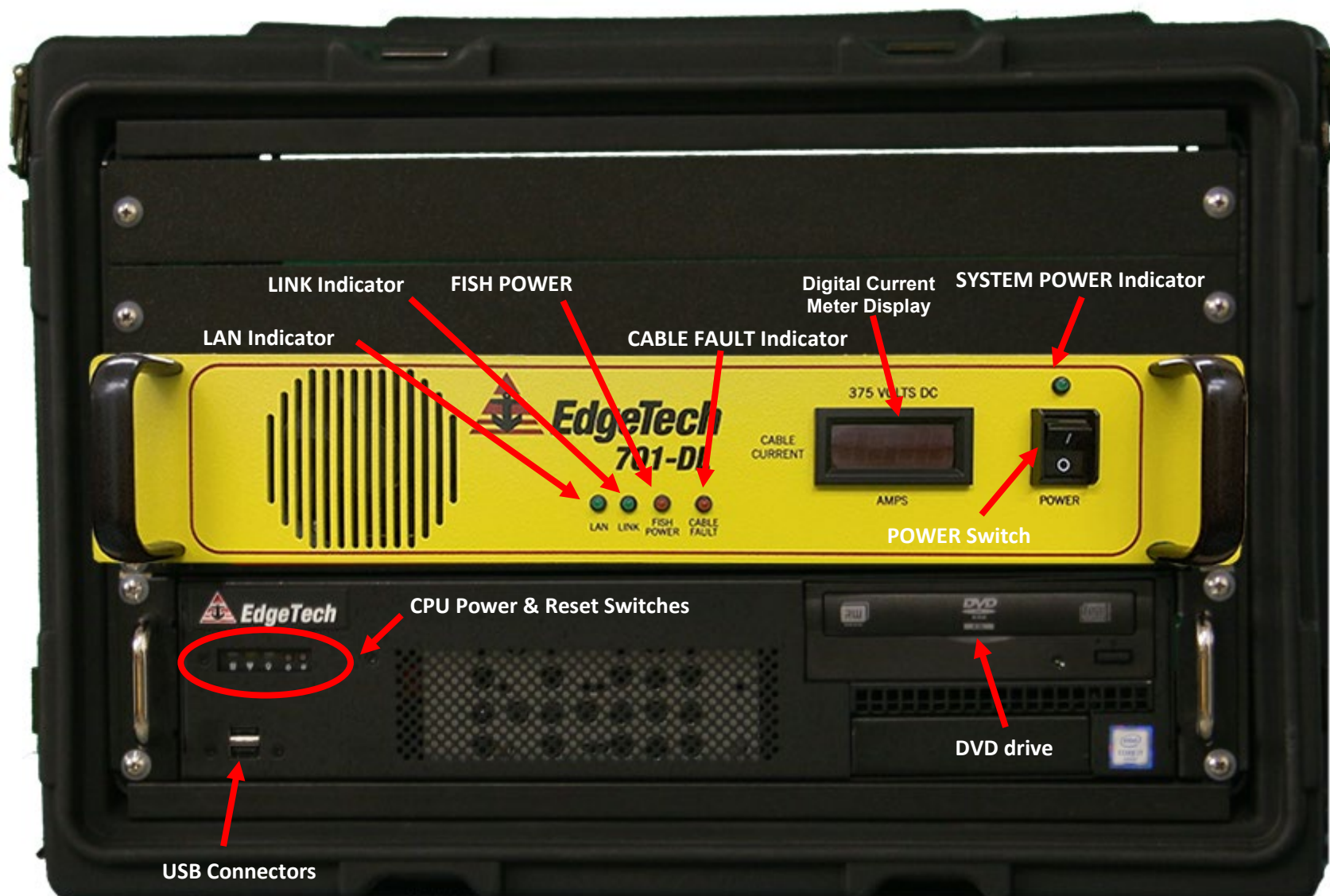


Figure 3-2: 701 With Computer Front Panel



Figure 3-3: 701 DL With Computer Rear Panel

3.3 Activating the 701-DL

To activate the 701-DL Digital Link System:

1. Turn on the computer and launch the Discover application.
2. Turn on the line power switch on the back panel of the 701-DL Digital Link. This switch can be left in the on position if desired.
3. Turn on the power switch on the front panel.
4. The fish power indicator should illuminate; the LAN indicator should flash continuously. The LINK indicator should flash while a reliable communications link with the towfish is being established and then illuminate continuously when the link is found. Also, the NET Radio Indicator Tab in the lower control panel of the Discover application UI should display:

NET: ON

3.4 Post Recovery

Power down the topside computer and 701-DL after recovering a tow vehicle from a survey. The unit can then be safely disconnected from the tow vehicle. If the next survey is not for an extended time period, EdgeTech recommends storing the unit in its original shipping container in a safe and dry environment

4.0 MAINTENANCE

The 701 Digital Link is designed to be rugged and requires little maintenance. Connectors should be cleaned when needed. The fuse may need to be replaced depending on years of use. Please contact [CUSTOMER SERVICE](#) for a replacement fuse if needed.

5.0 TROUBLESHOOTING

This section provides instructions for tips for identifying and correcting operational problems. For questions or guidance with using this section, contact [EDGE TECH CUSTOMER SERVICE](#).

5.1 701-DL Digital Link Troubleshooting Guide

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
The green POWER indicator on the topside does not illuminate when the unit is turned on.	POWER switches are not turned on.	Verify rear and front panel POWER switches are on.
	No AC power. When using the AC power connector.	Verify that the topside processor is connected to AC power. Check the AC power source. Verify that the fuse is good.
	AC Fuse bad	Check fuses for continuity. Replace if necessary.
	The indicator is not operating.	Open the topside processor and check the indicator and wiring.
The Green LAN indicator on the topside does not illuminate when the unit is turned on.	There is no connection between the topside and the computer.	Check LAN connections between the topside and laptop.
	The indicator is not operating.	Open the topside processor and check the indicator and wiring.
Green LINK indicator on the topside flashes when the topside is turned on. After one 1-minute, the flashing should stop, and the indicator should remain lit.	The tow cable is disconnected or faulty.	Check connections and tow cable.
	The modem settings on the topside are incorrect.	Refer to the manual for modem settings.
	Towfish is faulty.	Check topside on different Towfish.
The Cable Fault indicator light flashes at a 1Hz rate.	Cable is not detected	Check connections and tow cable.
The cable Fault indicator light flashes at a 3Hz rate.	Excessive Current	Check connections and tow cable.
	Shorted Cable	Check connections and tow cable.

Table 5-1: 701-DL Digital Link Troubleshooting Guide

5.2 701-DL with 2U Computer Troubleshooting Guide

This troubleshooting section is for the 701-DL and Computer Combo.

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Blue Power Indicator on 2U CPU does not illuminate	The POWER switch is not turned on.	Verify that the POWER switch located in the rear of the CPU is on.
	No AC power.	Verify that the 2U CPU is connected to AC power. Check the AC power source.
	The indicator is not operating.	Open the topside processor and check the indicator and wiring.

Table 5-2: 701-DL Rackmount Troubleshooting Chart

A.0 COMPUTER SYSTEM RESTORE

The following section outlines the procedures for backing up and restoring the system drive.

CAUTION! All data will be lost upon restoring the system to factory settings. Therefore, be sure to back up all data before performing the procedure below.

1. Ensure that the topside is off.
2. Insert a USB3 flash drive in the blue USB3 port.
3. Start topside and be prepared to press the F** key when prompted:
 - a. If the topside is rack mount, press F11.
 - b. If the topside is a laptop, press F12.
4. Under Please select boot device: By using up/down arrow keys, select EUFI: Corsair Voyager 3.0 000A, then press Enter.
5. Wait for Paragon Backup & Recovery 14 Home screen to appear, then click the Restore icon.
6. On the *Welcome to the Restore Wizard* screen, click Next.

Browse for Archive and click the specific image (the file ending with the extension “.pbf”). When the Archive File Details window appears, click Next.
7. At the What to restore window, click Basic MBR Hard Disk 0, and click Next.
8. At the *Where to restore* window, ensure that Basic MBR Hard Disk 0 is already selected (brown box around it). If it is not, use the up/down arrow keys to choose. Click Next.
9. At the *Restore Results* window, make no selection and click Next.
10. At the Ready to restore from the archive window, select ☐ Yes, apply the changes physically. Click Next. *Restoring will begin.*
11. To complete the restore wizard, click Finish. Click Shutdown.
12. Remove the USB3 flash drive and restart the topside.
13. Re-boot, click on the Windows icon, and navigate Control Panel > System. Activate Windows using the supplied key code on the rear of the laptop or 2U rack mount computer.

B.0 PRINTERS

Printers connect to the system via an ETHERNET cable. The following ETHERNET-only printers work well with the system:

- EPC HSP 100
- EPC 9206
- EPC 1086-HT
- iSys V8.5
- ISys V12

NOTE: EdgeTech Topsides support the ETHERNET-only Printers listed above. Consult manufacturer's operating manual for printer requirements and set up.