JetCon 1701GP-U

Industrial Gigabit PoE Injector

User's Manual

Version: 1.0

Date: April 2019

Declaration of CE

This product has passed the CE certification for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his expense.

The user is cautioned that changes and modifications made to the equipment without approval of the manufacturer could void the user's authority to operate this equipment

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1. Introduction

This document describes the method of how to use the Korenix JetCon 1701GP-U Industrial Gigabit PoE injector, includes installation the specifications that it has. Following this user manual, you can get fully imagination about JetCon 1701GP-U and all information to help you construct the network infrastructure. The following are brief introduction of JetCon 1701GP-U.

Real Industrial Gigabit Ethernet Media Converter

The JetCon 1701GP-U industrial Gigabit PoE injector equipped a rugged metal case with thirty-one grade ingress protection to against damaged solid objects or dust; With the excellent characteristics of heat dissipation, JetCon 1701GP-U has better survive ability than ordinary Gigabit PoE injector which is enclosure by steel metal with various of heat dissipation holes. Not only single power input, the functionality of real time redundant power backup results in a real Industrial Gigabit PoE Injector with a non-stop transmission.

Activate Fault Alarm

The JetCon 1701GP-U provides an alarm relay to trigger out a real alarm signal for power event. The alarm mechanism can be triggered by an external alarm equipment to inform maintenance I.T. engineers. It makes a result of maintenance time saving.

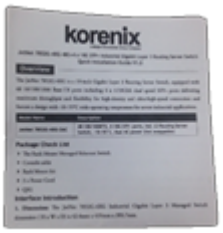
1-1. Features

- Two 10/100/1000Base-T RJ-45
- IEEE802.3af/ IEEE802.3at/IEEE 802.3bt compliance
- Power redundancy
- Rigid IP-31 grade metal case
- -40~75℃ Wide Operating Temperature

1-2. Package Checklist

JetCon 1701GP-U package includes the following items:

- JetCon 1701GP-U x1
- One DIN-Rail clip (already screwed on the back of JetCon 1701GP-U x1



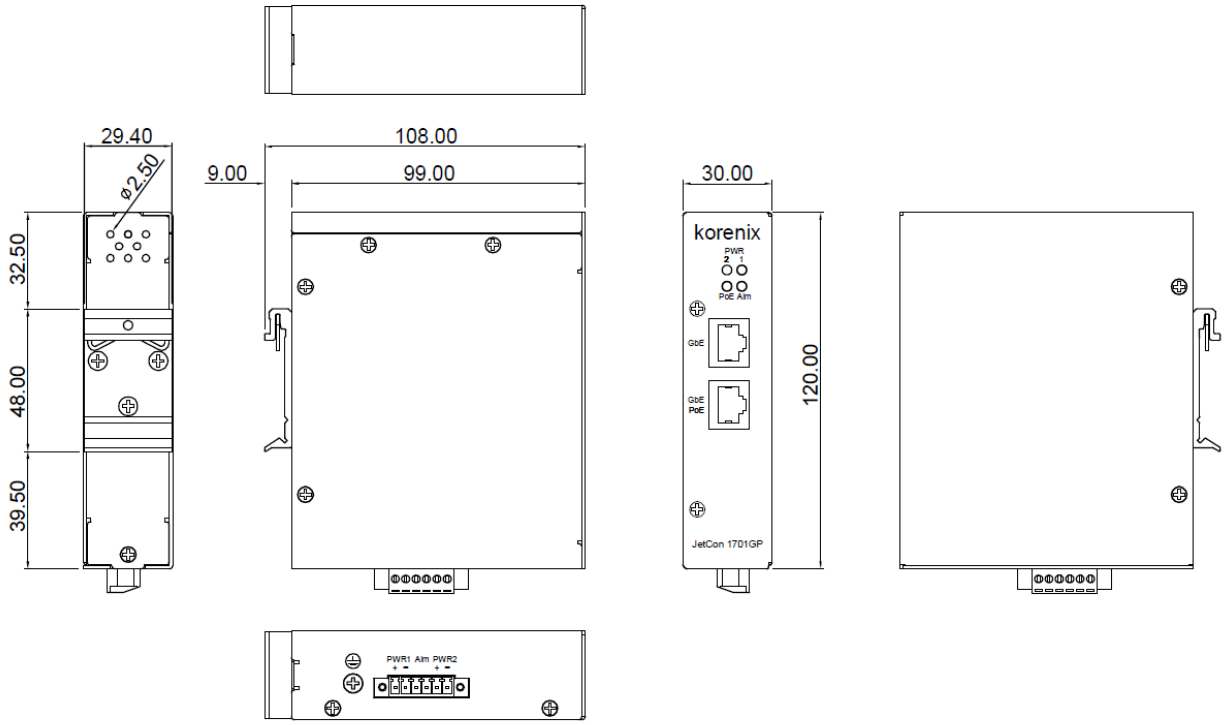
JetCon 1701GP-U Quick Installation Guide

Contact your sales representative if any item is missing or damaged.1

2. Hardware Description

2-1. Dimensions

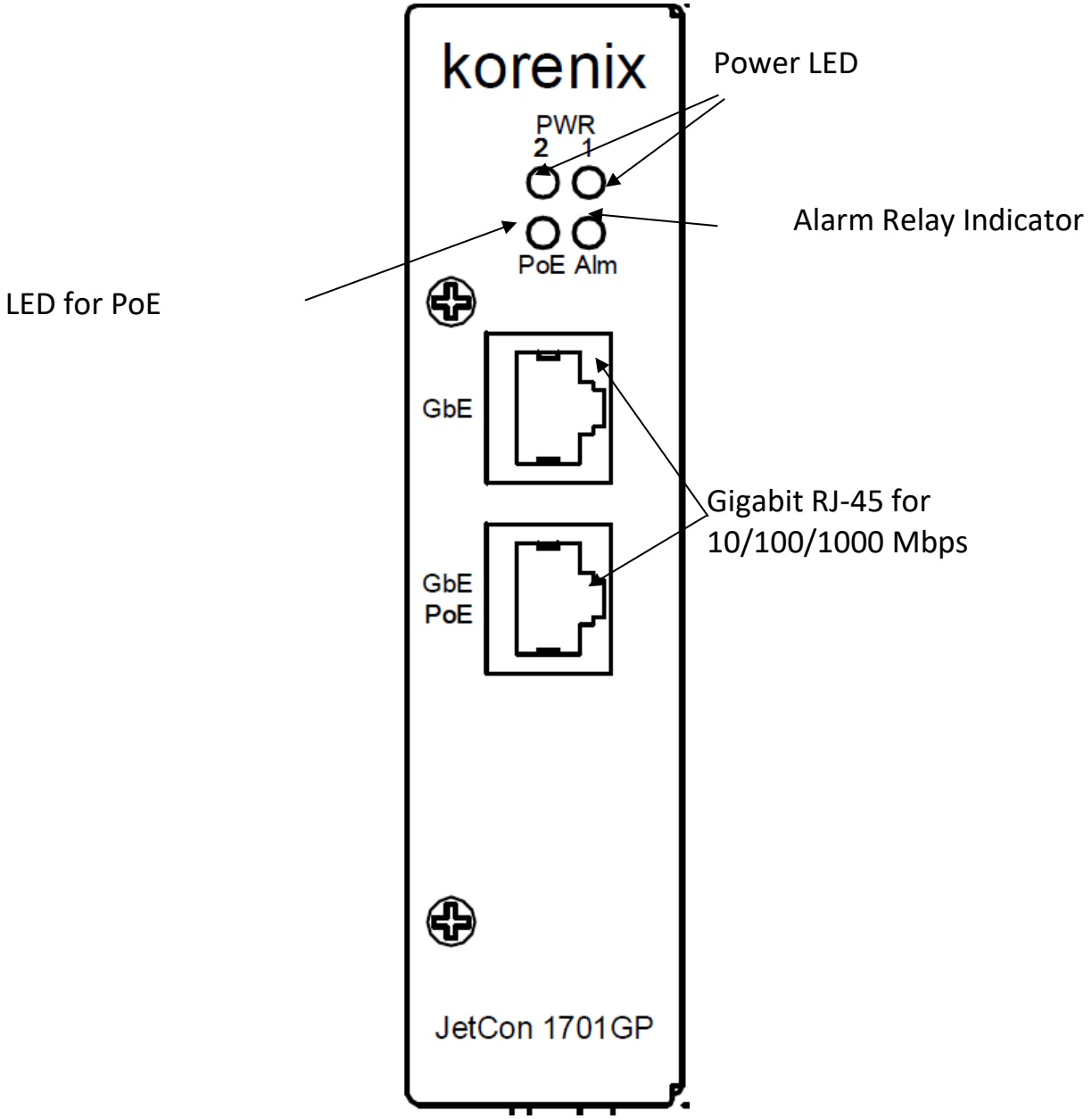
The dimension of JetCon 1701GP-U is **120 mm(H) x 30 mm (W) x99 mm (D) (with DIN rail clip)**



2-2. Front Panel

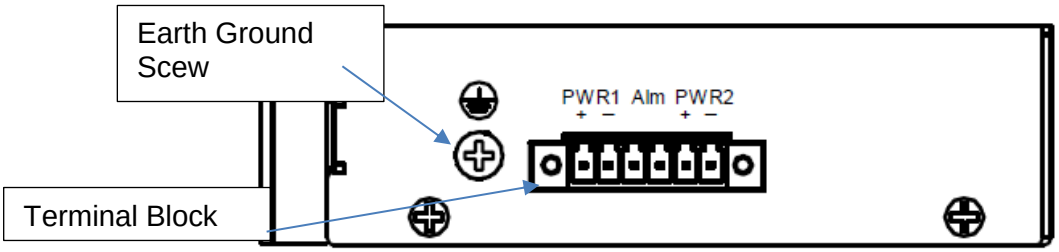
The Front Panel of the JetCon 1701GP-U Industrial Gigabit PoE injector is shown in Figure A

Figure A



2-3. Bottom View

The bottom side of the JetCon 1701GP-U includes one 6-pin removable terminal block connector.



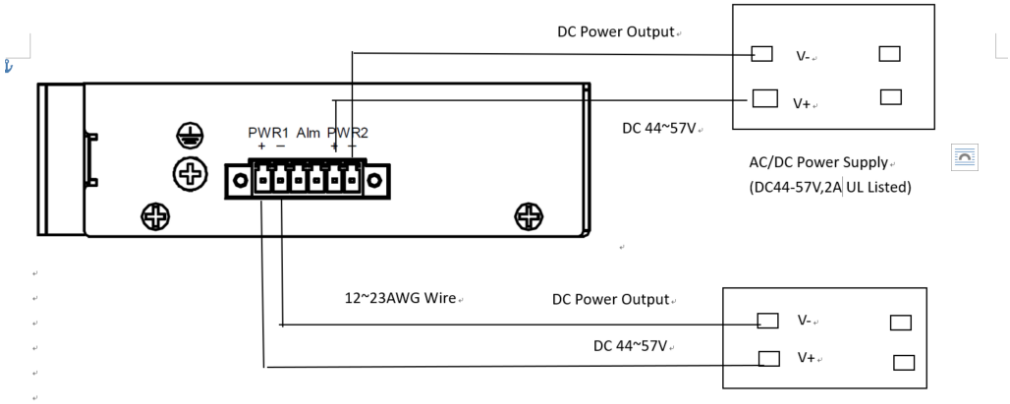
The power range of JetCon 1701GP-U is from DC 44~57V with redundancy and polarity reverse function.

To prevent interference and get better performance, it is strongly suggest make a well earth grounding by the “Earth Ground Screw”.

2-4. Wiring the DC Power Inputs

Follow the steps below to wire JetCon 1701GP-U redundant DC power inputs.

[Note] The suitable electric wire ranges from 12 to 23 AWG.

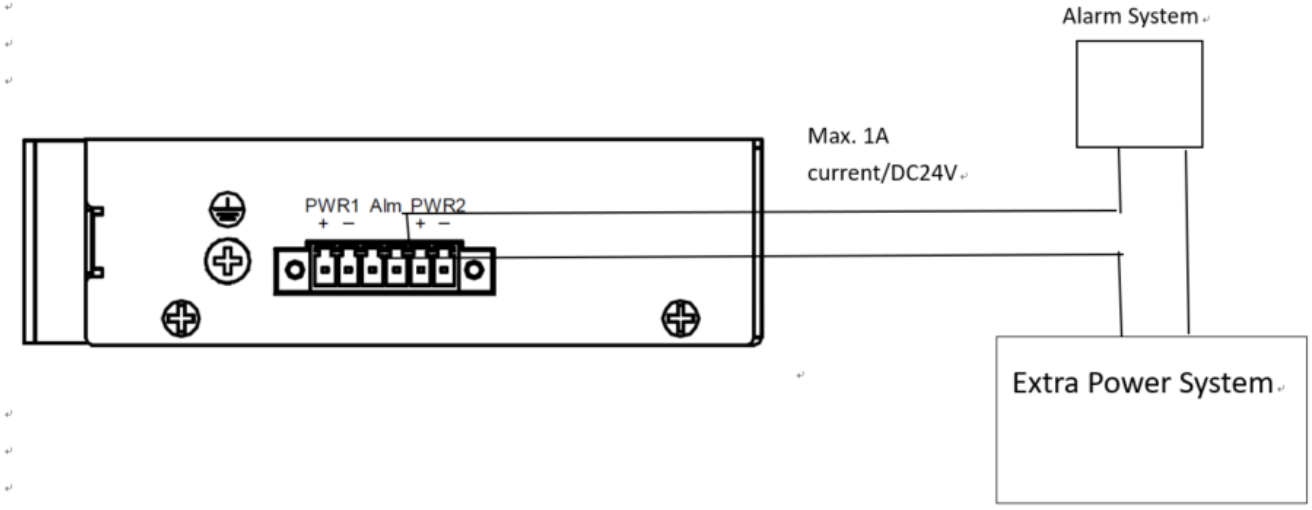


1. Insert the positive and negative wires into the V+ and V- contacts respectively of the terminal block connector
2. Tighten the wire-clamp screws to prevent the DC wires from being loosened.
3. The Power 1 and Power 2 support power redundancy and polarity reverse protection functions.
4. It accepts positive or negative power system input, but Power 1 and Power 2 have to apply the same mode.

2-5. Connect the Dry Relay Output

JetCon 1701GP-U provides one dry relay output for fault power event.

The relay conductor ability is 24W when it connects with a DC 24V power source and maximum current is 1A. In the following diagram shows how to make an alarm circuit.



About the relay function, please refer section 4-4

2-6. LED Indicators

The front panel of JetCon 1701GP-U includes 2 Power LEDs, 1 LED for Alarm Relay , 1 LED for PoE. Following table gives descriptions of the function for each LED indicator.

LED	Status	Description
Power 1	Green On	Power 1 is supplying DC power.
	Off	No power is being supplied.
Power 2	Green On	Power 2 is supplying DC power.
	Off	No power is being supplied.
PoE	Amber On	Output power is supplied
	Amber Off	No output power
Alarm	Red on	PW1 or PW2 is disconnect.
	Off	PW1 and PW2 Power Connect

Table 1

2-7. Ports

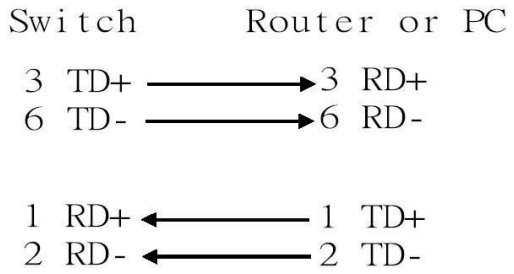


Fig A. Straight through Cabling Schematic for 10/100Mbps

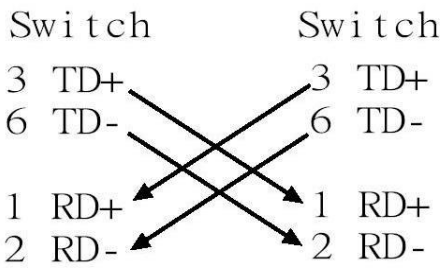


Fig B. Cross Over Cabling Schematic for 10/100Mbps

Fig. C Straight through cable schematic for 1000Mbps

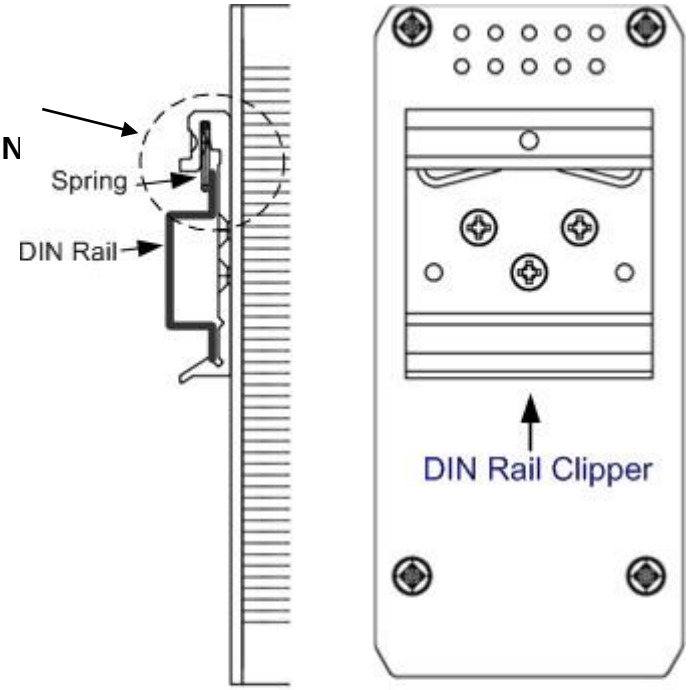
Fig. D Cross over cable schematic for 1000Mbps

3. Mounting Installation

3-1. DIN-Rail Mounting

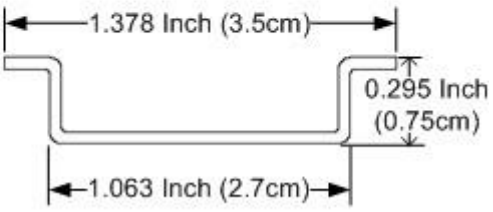
The DIN-Rail clip is already attached on the rear side of JetCon 1701GP-U. JetCon 1701GP-U supports EN 50022 standard DIN Rail, in the following diagram includes the dimension of EN 55022 DIN Rail for your reference.

The DIN rail should behind the spring when install the JetCon 3701GP-U onto the standard DIN Rail.



Follow the steps below to mount the JetCon 1701GP-U to the DIN-Rail track.

1. Insert the upper end of the DIN-Rail clip into the back of the DIN-Rail track from its upper side
2. Lightly push the bottom of the DIN-Rail clip into the track.
3. Check if the DIN-Rail clip is tightly attached to the track.
4. To remove the JetCon 1701GP-U from the track, reverse the steps above.



DIN EN 50022 DIN Rail Dimension

4. System Configuration

The JetCon 1701GP-U provides Ethernet signal transfer function from electrical to optical and various packet handling and cable diagnostic features. In this chapter, we will introduce how to configure those functions and benefits as following topics.

4-1. Event Alarm Relay Configuration

4-1. Event Alarm Relay Configuration

The connection of Event Alarm Relay already described in section **2-5 Connect the Dry Relay output** and this section will introduce how to enable i

5. System Installation

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5-1. Installation and Testing

1. Take out your JetCon 1701GP-U Industrial Gigabit PoE Injector from the package box.

2. Check if the DIN-Rail clip is attached to the JetCon 1701GP-U. If the DIN-Rail clip is not attached to the JetCon 1701GP-U, refer to **DIN-Rail Mounting** section for DIN-Rail installation.
3. To place the JetCon 1701GP-U on the DIN-Rail track or wall, refer to the **Mounting Installation** section.

4. Pull the terminal blocks off the JetCon 1701GP-U and wire the power lines. Refer to the **Wiring the DC Power Inputs** section for how to wire the power inputs.

5. PWR1 and PWR2 dual power inputs can be connected to power sources simultaneously. When the primary power source fails (the default setting is PWR1), the system will automatically switch to the secondary power source (PWR2), preventing any power interruption.
   Both of Power 1 and Power 2 support positive electricity electricity power system. Please notice the power system for power 1 and power 2 only accept positive electricity power system at one time

6. Check the LEDs of PWR1 and PWR2 to make sure that JetCon 1710GP-U is operating normally.

7. Use Category 5e straight through Ethernet cables with RJ-45 connectors to connect network devices.

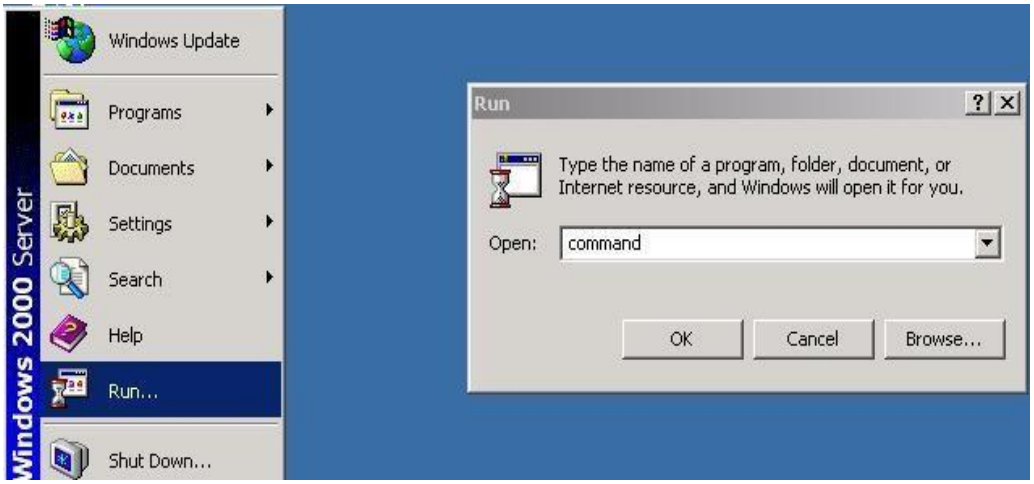
8. Connect one side of an Ethernet cable with a RJ-45 connector to the JetCon 1701GP-U's Ethernet port (RJ-45 port), and the other side of the ethernet cable

to the network device's Gigabit ethernet port.

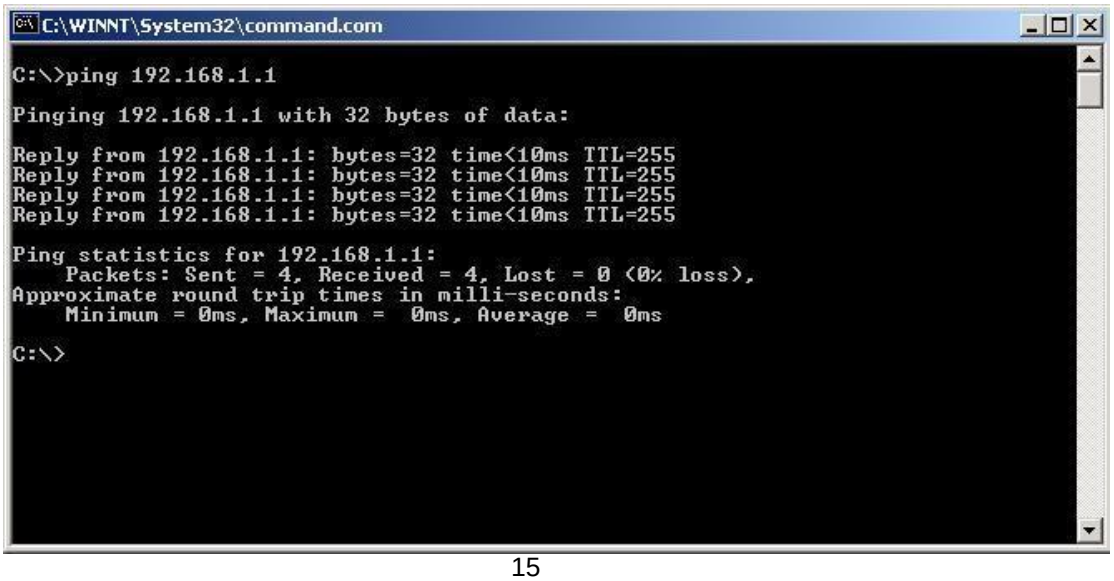
9. Check the LED indicator of port status (blinking green) on the JetCon 1701GP-U to see if the network connection is successfully established. Power on the PC host, activate the Command Line mode, and ping the connected Ethernet device to see if it responds.

9.1 To enable the "Command Line mode", click **Run** in the Start menu, type **Command**, and click **OK** to continue.

10.

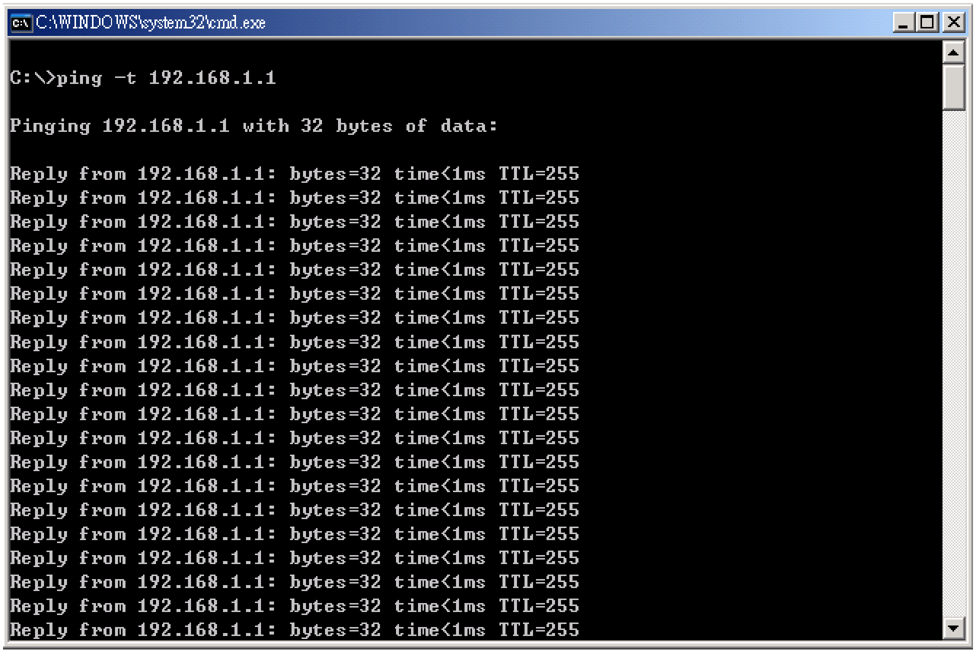


10.1 Type ping 192.168.1.1 command to check the connection. Here we use IP address 192.168.1.1 as an example. Before the testing, be sure your PC host and target device are in the same subnet.



11. Power on the host, activate the Command Line mode, and ping the connected Ethernet device by typing “ping –t 192.168.1.1” command to see if it will respond.

12. The parameter-”t” allow you to continue to ping the network device, as shown in the figure below.



Before you continue, make sure that both PWR1 and PWR2 are successfully connected to power sources. When PWR1 fails, the LED for PWR1 will go out. At that moment, if the ping command is still replying, then it proves that redundant power input function works normally.

13. Exit the Command Line mode, and connect PWR1 power input. At this stage, your JetCon 1701GP-U has been tested and the installation is completed.

6. Troubles shooting

- Make sure you are using the correct DC power suppliers (DC44~57 V) or power adapters.
- Select Ethernet cables with specifications suitable for your applications to set up your systems. Ethernet cables are categorized into unshielded twisted-pair (UTP) and shielded twisted-pair (STP) cables. Category 3, 4, 5 Ethernet cables are suitable for systems with 10 Mbps transmission speed. For systems with 100/1000 Mbps transmission speed, Category 5, 5e, 6 Ethernet cables are the suitable specifications for this environment. Also make sure that the distance between each node cannot be longer than 100 meters (328 feet).
- If the power LEDs goes off as the power cord plugged in, a power failure might occur. Check the power output connection to see if there is any error at the power source. If you still cannot solve the problem, contact your local dealer for assistance

7. Technical Specifications

Technology	
Standard	IEEE802.3 10Base-T IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-T IEEE802.3z Gigabit Ethernet Fiber IEEE802.3x flow control and back-pressure. IEEE802.1p Class of Service IEEE802.1Q Quality of Service
Performance	
Forwarding Technology	Store and Forward technology with 64 ~1536 bytes packet forwarding ability.
System Throughput	1.48 Mpps
Packet buffer	1 Mbits
Link Loss Forwarding	Two-way loss-signature auto forwarding, configured by DIP switch.
Power event Alarm	Relay for power event
Class of Service	2 queues for each port with 8:1 forwarding scheme for High/Low queue.
Quality of Service	Supports Tag based packet priority, IPv4 ToS and IPv6 DSCP.
Interface	
Number of Ports	1x10/100/1000 Base-TX with Auto MDI/MDI-X function, Auto-Negotiation 1 x SFP socket with hot-swappable functionfor 100M/Gigabit SFP Transceiver.
Connectors	10/100/1000 Base-TX: RJ-45 SFP socket: support 3.3V Gigabit Ethernet 1.25 Gbps Fiber Transceiver and 155Mbps fiber transceiver. Terminal block: 4-Pin for redundant power input; 2-Pin for alarm relay output.
Cables	RJ-45 Connector: 4 pairs of Cat-5 UTP/STP cable with EIA/TIA 568B type conductor arrangement for 1000Base-T. Maximum link distance is 100 meters.
Configuration DIP Switch	DIP 1: Power Event Alarm Enable/Disable DIP 2: SFP speed 1000Mbps or 100Mpbs DIP 3: Link Loss Forwarding Enable/Disable
Diagnostic LED	**System**: Power (Green) x2 ,Link Loss Forwarding (Red) x1, Alarm (Red) x1,PoE (Amber) x1 **RJ-45 port:** - Link/Activity (Green): On (Link), Blinking (Activity) - Speed (Amber): On (Speed 1000), Off (Speed 10/100) **SFP port:** Link/Activity (Green): On (Link), Blinking (Activity)
Power Requirements	
System Power	DC 48V (10~60V) with polarity reverse correction and over current protection.
Power Consumption	2.5Watts @ DC 48V
Mechanical	
Installation	DIN-Rail mount
Case	Aluminum alloy metal case with grade 31 of ingress protection.
Dimension	120mm(H) x 55mm (W) x108 mm (D) (with DIN rail clip)

Weight	530g with package 366g without package
Environmental	
Operating Temperature	-40℃ ~75℃
Operating Humidity	0% ~ 95% non-condensing
Storage Temperature	-40℃ ~ 80 ℃
Storage Humidity	0%~ 95% non-condensing
Regulatory Approvals	
EMI	FCC Class A, CE/EN55032.
EMS	EN61000-4-2,EN61000-4-3,EN61000-4-4,EN61000-4-5,EN61000-4-6, EN61000-4-8, EN61000-4-11
Shock	IEC 60068-2-27 (compliance)
Vibration	IEC 60068-2-6 (compliance)
Free Fall	IEC 60068-2-32 (compliance)
MTBF	620,000 hours

8. SFP Fiber Transceiver Order Information

Part Number	Description
SFPGSX	Gigabit SX SFP Transceiver, 850nm, multi-mode/LC, 550m
SFPGSX-w	Gigabit SX SFPTransceiver, 850nm, multi-mode/LC,550m, -40~85℃ Wide Temp.
SFPGSX2	Gigabit SX SFP Transceiver, 850nm, multi-mode/LC, 2km
SFPGSX2-w	Gigabit SX SFP Transceiver, 850nm, multi-mode/LC, 2km, -40~85℃ Wide Temp.

Revision History

Edition	Date	Modifications
V1.0	16-Apr,2018	New edition