Conettix ITS-D6686-UL

EN

Installation manual
Ethernet Network Adapter

BOSCH

Contents

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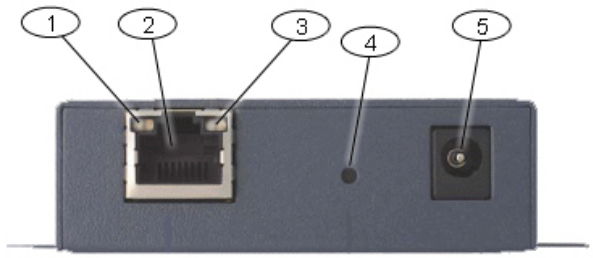
1.0 Introduction

The Conettix D6686 Ethernet Network Adapter is a two-channel network adapter that supports IP Addresses for both IPv4 and IPv6 environments. Networked installations can have one if it is only used with one D6600 receiver or two configured channels when used with a backup D6600 receiver configuration.

Follow these instructions to avoid the possibility of harm to the operator, or damage to the equipment.

1.1 Network Interface

Figure 1: Power/Ethernet



1- Ethernet Link LED
2- RJ45 Ethernet Jack
3- Ethernet Activity LED
4- Reset Pin
5- Power Plug

1.2 Serial Interface

Figure 2: D6686 Network Interface

1- Power/Diagnostic LEDs
2- Serial Port 2 (DTE) – optional (use supplied cable if required)
3- Serial Port 1 (DTE) – use supplied null cable

1.3 LEDs

Table 1: D6686 LEDs

LED	Description
Power/Diagnostic (Blue)	**Steady On:** Power OK **Blinking 2x:** No DHCP response **Blinking 2x:** Setup Menu active
RX Serial 1 Activity (Green)	**Off:** No data activity **Blinking:** Data received by D6686 on Channel 1
TX Serial 1 Activity (Yellow)	**Off:** No data activity **Blinking:** Data transmitted from D6686 on Channel 1
RX Serial 2 Activity (Green)	**Off:** No data activity **Blinking:** Data received by D6686 on Channel 2
TX Serial 2 Activity (Yellow)	**Off:** No data activity **Blinking:** Data transmitted from D6686 on Channel 2
Ethernet Link (Bi-color LED on left)	**Off:** No Ethernet link established **Solid Yellow:** 10 Mbps Ethernet link established **Solid Green:** 100 Mbps Ethernet link established
Ethernet Activity (Bi-color LED on right)	**Off:** No data activity **Solid Yellow:** Half Duplex data activity **Solid Green:** Full Duplex data activity

2.0 Installation

2.1 All Installations

Install the Conettix D6600 Communications Receiver/Gateway according to NFPA 70, NFPA 72, and the local authority having jurisdiction (AHJ).

The ITS-D6686-UL is suitable for Central Station Protective Signaling when it is installed and used in compliance with NFPA 72 and ANSI/NFPA 70. Installation limits for digital alarm communicator receivers (DACR) are under the jurisdiction of the local AHJ.

The equipment between Ethernet Interface Modules and the ITS-D6686-UL must be UL Listed Information Technology Equipment (ITE).

To comply with UL, ensure the following requirements are met:

- Mount the ITS-D6686-UL, the ITE network interface equipment, and the D6600 that it is connected to, in a standard 19-in rack.
- Connect the ITS-D6686-UL to an electrical outlet located inside the same rack with the D6686 and D6600.
- Install the ITS-D6686-UL in the same rack as the D6600 and within 6 m (20 ft) of the D6600.
- The Ethernet and RS-232 serial cables cannot exceed 6 m (20 ft) in length.
- Use an uninterrupted power supply (UPS) is when the ITS-D6686-UL is used for UL Fire (UL864) Protective Signaling Systems.
- Use the supplied transformer (Group West/Part number - 48D-12-900).

2.2 Mounting the D6686

Mount the D6686 on a rail or other user-supplied spot behind the D6600 that it will be connected to. Refer to *Figure 3*.

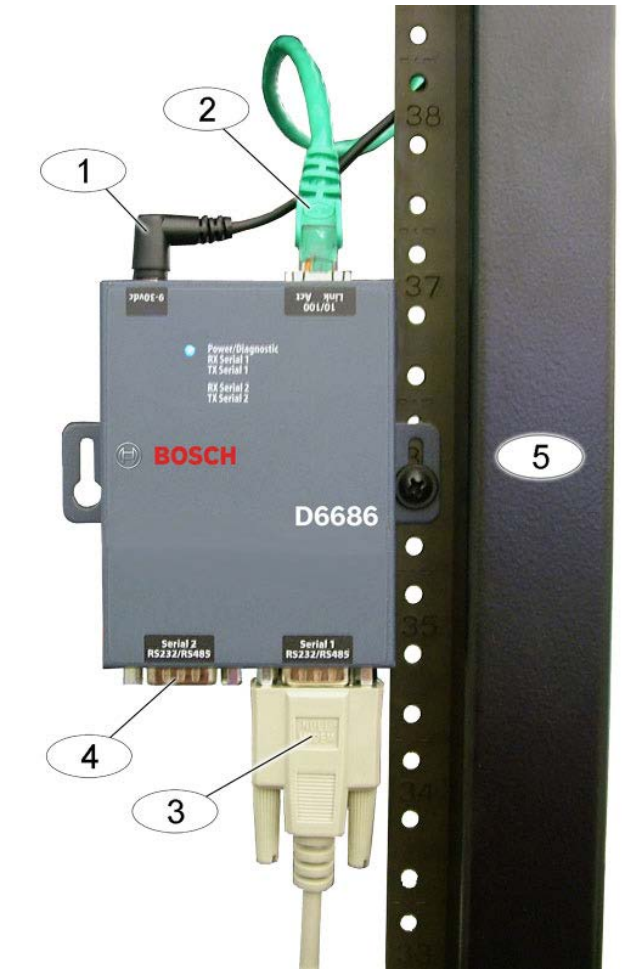
2.3 Connecting the D6686

Connect the D6686 as follows:

- Power cable to an available electrical outlet
- Ethernet cable to network switch
- RS-232 serial cable to Serial 1 port
  Refer to the *D6600/D6100IPv6 Installation and Operation Guide – Network Communication section,* (P/N: 4998122704) for applications using both serial ports.

Refer to *Figure 3*.

Figure 3: D6686 Connections



1– Power cable
2– Ethernet cable
3– RS-232 serial cable (Serial 1 port)
4– Serial 2 port (empty)
5 – Standard 19-in. mounting rack

3.0 Configuring and Programming the D6686

3.1 Factory Default IP Address

By default, the D6686 uses DHCP to obtain an IP Address. The unit requires a static IP Address. Refer to *Sections 3.2*, *3.3*, and *3.4* for more information.

3.2 Identifying the MAC Hardware Address

1. Verify that the D6686 is properly installed, connected, and powered. Refer to *Section 2.0 Installation* on page 4.
2. Locate the D6686's media access control (MAC), or hardware, address.

The MAC address is hard-coded into the D6686 during manufacturing, and it cannot be changed. This address is 6 bytes (12 digits) in length and is located on a label on the D6686 in the format of "xx-xx-xx-xx-xx-xx".

Figure 4: MAC Address Location

1- MAC address location on D6686 label

3. Record the MAC address and keep it for reference.

3.3 Obtaining an IP Address

Provide the D6686's MAC address to the site's network administrator, who will assign an IP address for the D6686.

An IP Address is an identifier for a computer or device on a transmission control protocol/internet protocol (TCP/IP) network. Networks use the TCP/IP protocol route messages based on the IP address of the destination. The format of an IP address using IPv4 is a 32-bit numeric address written as four numbers or fields separated by periods. Each number can be 0 to 255. The format of an IP address using IPv6 is a 128-bit numeric address written as eight groups of four hexadecimal digits separated by colons.

For example, 190.200.128.111 could be an IPv4 address and 2001:0db8:85a3:0042:0000:8a2e:0370:7334 could be an IPv6 address. Within an isolated network, you can assign IP addresses at random if each one is unique. However, connecting a private network to the Internet requires using registered IP addresses (called Internet addresses) to avoid duplicates. IPv6 addresses are typically set using DHCP on the network. The D6686 supports IPv4 and/or IPv6 addressing schemes or both at the same time.

3.4 Using the D6200 to configure the D6686

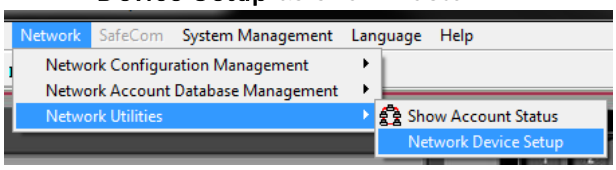
Bosch Security Systems, Inc. recommends that you read this entire section before proceeding.

> In order to access the configuration program, ensure that the D6686 and the PC used to configure it are directly connected using an Ethernet cable.
>
> Be sure that the PC being used to configure the device is configured to use DHCP to obtain an IP Address. When it is connected directly to the D6686 it will obtain an Auto-IP address.

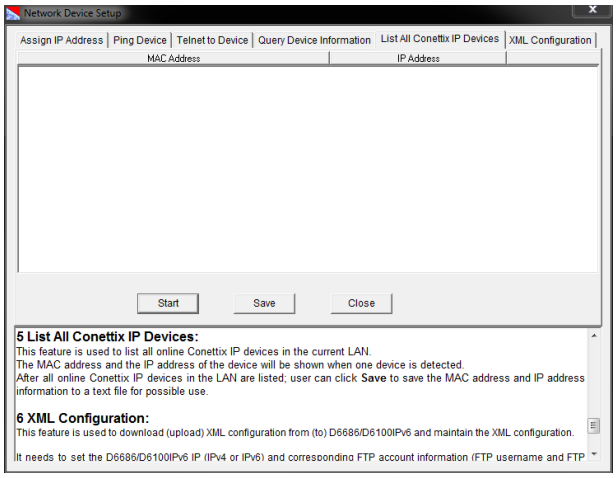
The D6200 Software is the recommended way to program the network devices. Review *Section 3.5 Programming Overview for the D6600* on page 8 and the *Network Utilities section* in the *D6200 Programming Software Operation and Installation Guide* (P/N: 4998154991).

1. When you have the IP address and the network administrator confirms that it is ready, connect the Ethernet port of the D6686 directly to the PC Ethernet port using a crossover Ethernet cable.
2. With the PC already booted and running, apply power to the D6686 and wait approximately 1 minute for the PC and D6686 to acquire an Auto-IP Address (169.254.xxx.xxx).

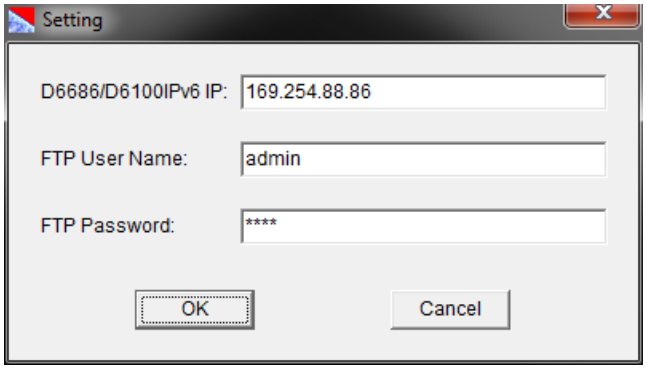
3. Open the D6200 software and select **Network – Network Utilities - Network Device Setup** as shown below



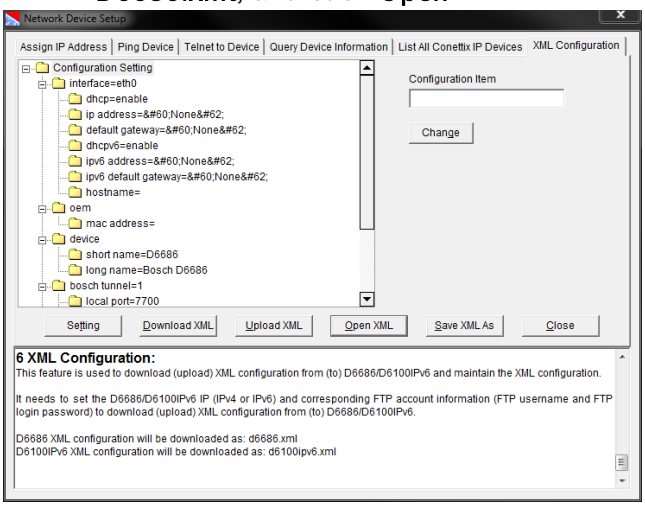
4. Select **List All Conettix IP Devices** tab and click the **Start** button. The program will scan the network for the device.



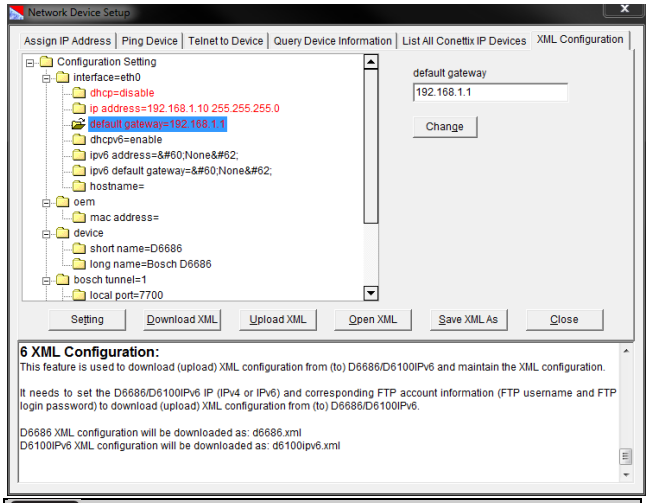
5. The D6686 will be shown in the list with the IP address. Record the IP address that is listed is shown.
6. Select **XML Configuration** tab and click the **Setting** button. Enter in the **Setting** dialog:
   - **D6686/D6100IPv6 IP:** The IP address recorded in the previous step
   - **FTP User Name:** admin
   - **FTP Password:** PASS
   - Click **OK**



7. Click the **Open XML** button, select **D6686.xml**, and click **Open**.



8. Make changes to the parameters that are required for your particular installation scenario by selecting the specific item, enter the required changes, and click **Change**. The values that are changed will be displayed in red as shown below. All of the programmable configuration parameters are listed on the next page with the valid values.



Only make changes to the Configuration Parameter column items listed below. Do not make any changes to the Configuration Sub-Section column values.

Table 2 – XML Configuration Parameters

Configuration Section	Configuration Sub-Section	Configuration Parameter	Default Value	Valid Values	Description
interface	eth0	dhcp	enable	enable, disable	Determines if IPv4 DHCP is used. If this is set to disabled, then a Static IPv4 Address needs to be specified in the IP Address Configuration Parameter.
interface	eth0	ip address	<None>	Accepts an IPv4 address and mask as either: 1 IP address only (192.168.1.1) gets a default mask, 2 CIDR (192.168.1.1/24), 3 Explicit mask (192.168.1.1 255.255.255.0)	If IPv4 DHCP is disabled, then an IPv4 Address must be entered here.
interface	eth0	default gateway	<None>	Accepts in IPv4 address in dotted notation (192.168.1.1)	If IPv4 DHCP is disabled, enter the IPv4 Gateway IP Address.
interface	eth0	dhcpv6	enable	enable, disable	Determines if IPv6 DHCP is used. If this is set to disabled, then a Static IPv6 Address needs to be specified in the IP Address Configuration Parameter.
interface	eth0	ipv6 address	<None>	Accepts an IPv6 address	If IPv6 DHCP is disabled, then an IPv6 Address must be entered here.
interface	eth0	ipv6 default gateway	<None>	Accepts an IPv6 address in colon notation (2001:0db8:85a3:0042:0000:8a2e:0370:7334)	If IPv6 DHCP is disabled, enter the IPv6 Gateway IP Address.
interface	eth0	hostname			Sets the hostname that is used with DHCP.
oem		mac address			Allows for an alternate MAC Address to be entered here supporting the failover configuration described in the *D6600/D6100IPv6 I&O Guide (4998122704)*.
device		short name	D6686		Sets the product short name displayed in command mode. (Max of 8 Characters)
device		long name	Bosch D6686		Sets the product long name displayed in command mode.
bosch tunnel	1 or 2	local port	7700 (tunnel 1) / 7701 (tunnel 2)		IP Port number the D6686 is listening on for IP traffic relative to each serial port. See the failover configuration described in the *D6600/D6100IPv6 I&O Guide (4998122704)*.
bosch tunnel	1 or 2	protocol	UDP	UDP, UDP AES	Determines the protocol to be used depending whether encryption is being used.(*See Important Note on next page*)
bosch tunnel	1 or 2	aes key size	128	128, 192, 256	Determines the Encryption Key Size in number of bits.
bosch tunnel	1 or 2	aes key	0102030405060708091011121314151 6	16 to 32 Hexadecimal characters	Enter the 16 to 32 Hexadecimal characters depending upon the Key size entered: 128-bit requires 16 Hex characters 192-bit requires 24 Hex characters 256-bit requires 32 Hex characters
xml import control		reboot	enable	enable, disable	DO NOT CHANGE. This instructs the module to reboot after the parameters are loaded into the device to begin using the new configuration. Eliminates the need to cycle power to the device. If this is changed from enabled, it will require a power cycle for the new configuration to take effect.

9. Click on the **Save XML As** button to save the changes made and enter a name for these configuration settings.
10. Click on the **Upload XML** button to send these changes to the D6686. The device will save the changes and reboot with the new configuration.
11. Disconnect the Ethernet cable connecting the PC and the D66868 and connect the D6686 to the network switch or router as required.

The D6686 is a Lantronix EDS-2100 with custom firmware installed and UL Listed for use on the D6600. If standard Lantronix firmware is installed on a D6686, the device will no longer function on a D6600.

If encryption is enabled on the D6686, you must enable it on all field devices (B420, DX4020-G, B5512, etc) with the same key. Encryption must also be enabled in the D6600 Receiver. Refer to the *D6600 Program Entry Guide* (P/N: 4998122702).

The network interface module (DX4020, C900V2, C900TTL-E, or D9133TTL-E) must have the proper software version to support encryption. For more details, refer to the *Device Installer Operation and Installation Guide* (P/N: 4998138688).

3.5 Programming Overview for the D6600

The D6600 Receiver is shipped with factory default program parameters and features already installed. Descriptions of the program items are found in the *D6600 Program Entry Guide* (P/N: 4998122702). Many of the operational features of the D6600 can be altered through programming options. The programming options you choose depend on:

- The type(s) of peripheral reporting device(s) used in your central station (for example external printer or automation computer)
- The supervision characteristics for these devices
- The type of communicators reporting to the receiver
- The number and type of receiving lines in use
- Sending the files back to the D6600 (CPU/Host/Network, Account Database, or Line Card)
- Upgrading the Software installed in the D6600 (CPU, System, or PSTN line cards)

Refer to the *D6200 Software Operation and Installation Guide* (P/N: 4998154991) for information and procedures on how to accomplish these tasks.

4.0 Specifications

Table 2: Specifications		
Supported Protocols	ARP, UDP/IP, TCP/IP, Telnet, ICMP, SNMP, DHCP, BOOTP, TFTP, and FTP	
Connectors		
	Serial:	2 - DB9M DTE serial ports
	Network:	1 - RJ45 10Base-T/100Base-TX Ethernet port
Cables		
	Ethernet:	CAT5 or better unshielded twisted pair **Max Length:** 6 m (20 ft) and installed in same enclosure/rack as D6600.
	RS-232:	**Max Length:** 6 m (20 ft) and installed in same enclosure/rack as D6600.
Data Rates	Serial speed ranging from 300 bps to 115.2 kbps (D6600 supports 38400 bps)	
Serial Line Formats		
	Characters	7 or 8 data bits
	Stop bits:	1 or 2
	Parity:	Odd, even, none
Modem Controls	DTR, DSR	
Flow Control	Software: XON/XOFF Hardware: CTS/RTS	
Management	FTP SNMP (read only) Serial login Telnet login	
System Software	Flash ROM standard: downloadable from a TCP/IP host (TFTP), FTP, or over serial port	
Diagnostic LEDs	Power 10/100 Mb Link on RJ45, 10/100 Activity on RJ45 RX Serial 1 Activity, TX Serial 1 Activity, RX Serial 2 Activity, TX Serial 2 Activity	
Compatibility	Ethernet: v2.0/IEEE 802.3 D6600	
AC Current Required	UPS Standby Current: 0.4 A	
Power Input	**Transformer: Group West, Part Number 48D-12-900.** **AC nominal operating range:** 120 VAC, 60 Hz, 0.15A max	
Standby Power	An uninterrupted power supply (UPS) is required for use with the D6686, when used for UL Fire (UL864) Protective Signaling Systems. A 60 hr. minimum UPS standby power supply is required for UL Certification.	
Environmental		
	Operating Temperature:	0° to 50° C (32° to 122° F)
	Storage Temperature:	-40° to 85° C (-40° to 185° F)
Dimensions (H x W x D):		
	Unit:	3.75 in. x 2.9 in. x .9 in. (9.5 cm x 7.3 cm x 2.3 mm)
Weight	0.6 lbs. (0.26 kg)	

NOTES

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