8 & 16 Port Smart Hub

User's Manual

Version 1.0

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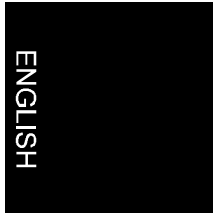
Preamble

This manual describes how to install and use the 8 & 16 Port Smart Hub. No special knowledge is required for installation.

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1. Introduction

The 8 & 16 Port Smart Hub are hubs for EtherNet networks. The speed is 10 megabytes per second. The special construction of the connections enables Unshielded Twisted Pair (UTP) and Shielded Twisted Pair (STP) cable to be used.

The 8 & 16 Port Smart Hub are designed for use in an office environment. No special computer room is required.

The 16 Port Smart Hub can be fitted in a 19-inch frame. The fitting materials are supplied.

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2. Safety

Read the following instructions carefully:

1. Remove the plugs from the sockets before cleaning the device. Do not use liquid cleaning agents or spray cans. Wipe down the device with a damp cloth.

2. Never use the device in damp conditions such as bathrooms, damp cellars, swimming pools, and so forth.

3. Make sure there is nothing on the power cable. Do not place the device where the cable may be subject to wear and tear or become damaged.

4. Never insert any objects into the grooves on the outside of the device, as you may touch hazardous voltage points or components. This can cause fire or severe electric shocks.

5. Never attempt to repair the device yourself. If you open or remove the housing, you may accidentally touch parts carrying a voltage. You will also be running other risks. This device can only be maintained by specially trained staff.

6. Remove the plug from the socket under the following conditions only, and have the device repaired by specially trained staff:

   a) the cable or the plug is damaged or worn;

   b) liquid has ended up in the device;

   c) the device has been in contact with rain or water;

   d) the device is not working normally;

   e) the device has fallen or the housing is damaged;

   f) the device is clearly performing poorly.

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3. Installation

3.1 Cabling

The 8 & 16 Port Smart Hub are designed for UTP or STP networks. The maximum length of such cables is 100 metres.

The cabling must as a minimum be suitable for class 3 data traffic. Class 5 is more appropriate for new installations. This is also suitable for the higher speed networks of the future.

3.2 Packaging

Keep the original packaging after unpacking, in case you need to return the device for servicing.

The packaging should contain the following parts:

1. this guide;

2. the device;

3. a set for fitting in a 19-inch rack (16 Port Smart Hub only);

4. power cable (16 Port Smart Hub only);

5. a power adapter (8 Port Smart Hub only);

6. a terminator for BNC coax, 50 Ohm;

7. a T-piece for BNC

Contact your dealer if you do not have everything on this list.

The maximum length for coax cable is 185 metres. Use the AUI connection (d) in combination with an external transceiver for greater distances (up to 500 metres). Note the position of the AUI/coax switch when connecting the 8 Port Smart Hub. This must point in the direction of the connection to be used.

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3.3 Connecting

Link a maximum of 4 hubs via the loop switch connection (b). See figures 1, 2 and 3. When using the 8 Port Smart Hub the switch (g) must be set to '8=' , and with the 16 Port Smart Hub to '16=' in order to be able to use the loop connection.

Use the BNC (coax) connection (a) in combination with 50 Ohm cable to link more than 4 hubs. See figures 1, 2 and 4.

Connect the computers to the UTP/STP cables. Note the maximum length for UTP or STP cables - 100 metres.
N.B.:   <u>*Only*</u> *use an earthed socket for the 16 Port Smart Hub.*
An unearthed socket is dangerous and may cause faults
in the network in the form of current fluctuations.

Connect the hubs to the power supply. If the hub has an on/off switch, switch it on. The PWR indicator then comes on.
N.B.:   *If coax cable is used to connect several Hubs, ensure*
proper earthing of the external shield of the coax cable.
Poor earthing is dangerous and may cause faults in the
network in the form of current fluctuations..

Now connect the cables from the computers to the UTP/STP connections on the hub (f). The green 'LINK' light (c) comes on as soon as the cable is inserted into the connection. If not, the computer is not switched on or the cable is not properly connected.

If data is sent via the link, the LINK indicator will flash. A link indicator flashing yellow or red indicates a short in the cable or that some other serious network problem has occurred in this connection.

No special connection for the file server is needed. This may be connected at any point in the network.

The hub can remain switched on continuously.

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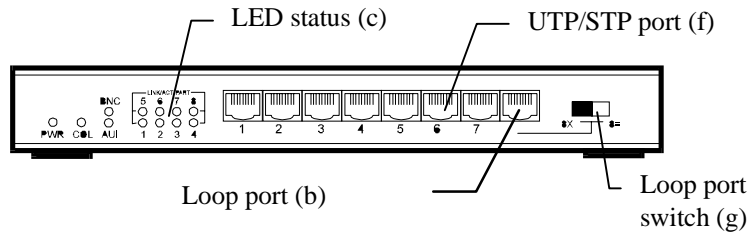LED status (c)   UTP/STP port (f)

Loop port (b)   Loop port switch (g)

Figure 1a: Front of the 8 Port Smart Hub

Coax port (a)   AUI port (d)

Adaptor connector
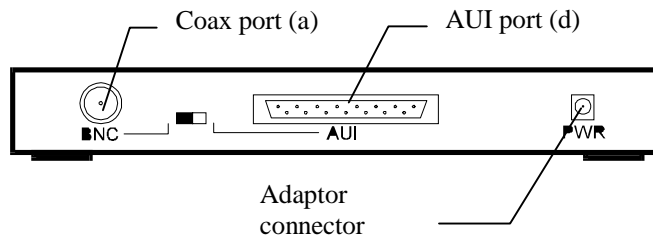
Figure 1b: Rear of the 8 Port Smart Hub

UTP/STP port (f)   Loop port (b)

LED status (c)   Loop port switch (g)
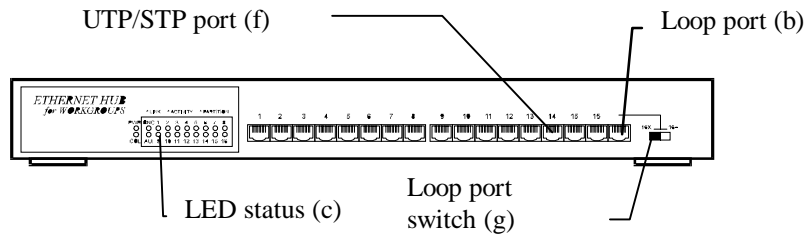
Figure 2a: Front of the 16 Port Smart Hub

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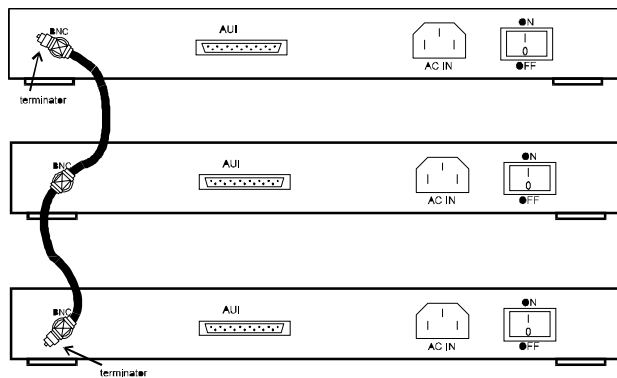AUI port (d)

Coax port (a)

Connection for
power cable (e)
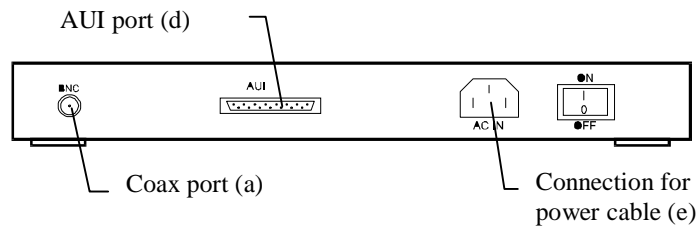
Figure 2b: Rear of the 16 Port Smart Hub
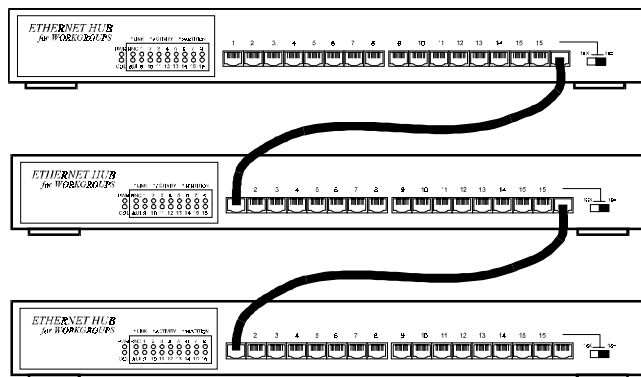
Figure 3: Combining several hubs via the loop connection

Figure 4: Combining several hubs via the coax connection

4. Instructions on use

The 8 & 16 Port Smart Hub do not have any control features that have to be operated during use.

Although the hubs may have an on/off switch, it is best to leave them on.

The hubs do not require preventive maintenance. As the housing is virtually sealed, no dust can penetrate. Use a soft, damp cloth to clean the exterior. Any dust that gathers in unused connections can best be removed with a vacuum cleaner.

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5. Trouble shooting

The 8 & 16 Port Smart Hub are simple to install and do not require any special settings. If you have any problems with the network, check the cables and the settings of the network computer in particular.

Some general problems and how to overcome them:

Symptom	Possible Cause	Solution
Indicators fail to come on.	Power not properly connected.	Connect power cable.
	On/off switch is off.	Set switch to 'on'.
No network switch is possible via the hub.	UTP/STP cable not properly secure (LINK did not come on).	Push in cable.
	Coax cable without terminator on both sides.	Connect terminator to coax cable.
	UTP/STP cable contains wrong connections.	Not only must the cable be 1:1, the sequence of the wires in the plug is essential to proper operation. It is preferable to use assembled cables, and not cables you have put together yourself.
	Loop switch set incorrectly.	Reset loop switch.

Symptom	Possible Cause	Solution
Network unreliable.	Too long a cable.	Measure cable length cable. Max. length is 100 metres for UTP/STP cable and 185 metres for coax cable.
	Too many repeaters or hubs in the chain.	Maximum of one chain per 3 devices when linking networks. Use coax cable to link more than 3 hubs.
	UTP/STP cable is not properly constructed.	Not only must the cable be 1:1, the sequence of the wires in the plug is also vital to proper operation. It is preferable to use assembled cables with plugs, and not ones you have made yourself.
	UTP/STP cable runs past an interference source such as a transformer, monitor, television, or neon tube.	Increase distance from cable to source by 50 cm.
	Network earthing not correct.	Connect all computers to earthed sockets. Earth the shield on the coax cable.

Symptom	Possible Cause	Solution
LINK indicator turns red or yellow.	Shortcircuit in the network cable	Replace network cable.
	Poor network card connection.	Replace network card in the workstation.
LINK indicator fails to come on.	STP/UTP cable loose.	Push home the STP/UTP cable.
	STP/UTP cable faulty.	Repair.
	Workstation not switched on or not properly connected.	Repair.
	With loops, loop switch incorrectly set.	Reset switch.

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Appendix A: Specifications

8 Port Smart Hub

IEEE 802.3 standards:	10Base-T
	10Base2
	10Base5
Connections for cables	8x RJ-45 (UTP/STP)
	1x BNC (coax)
	1x AUI (thick EtherNet)
Weight	0.73 kg, excluding adapter
Dimensions	440 x 150 x 45 mm
Approvals	EN-50082-1
	EN-55022
	EN-60950
Power	230 to 240 volt, 10 watt
Ambient temperature	0 to 55 degrees Celsius
Moisture	10 to 90% non condensed

16 Port Smart Hub

IEEE 802.3 standards:	10Base-T
	10Base2
	10Base5
Connections for cables	16x RJ-45 (UTP/STP)
	1x BNC (coax)
	1x AUI (thick EtherNet)
Weight	1.5 kg
Dimensions	440 x 150 x 45 mm
Approvals	EN-50082-1
	EN-55022
	EN-60950
Power	100 to 240 volt automatic, 10 watt
Ambient temperature	0 to 55 degrees Celsius
Moisture	10 to 90% non-condensed