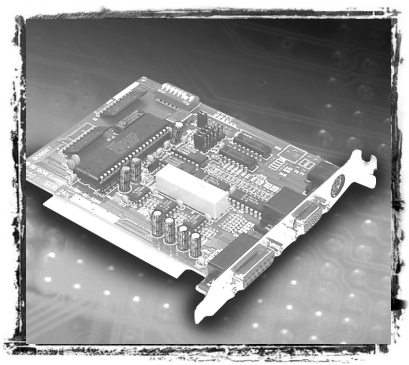
MINICOM
ADVANCED SYSTEMS

CLASSNET™

BOARD VERSION

INSTALLATION GUIDE



5UM10042 V2 01/02

The Classnet Board Version is produced by Minicom Advanced Systems Limited.

Technical precautions - This equipment generates radio frequency energy and if not installed in accordance with the manufacturer's instructions, may cause radio frequency interference.

This equipment complies with Part 15, Subpart J of the FCC rules for a Class A computing device. This equipment also complies with the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications. These above rules are designed to provide reasonable protection against such interference when operating the equipment in a commercial environment. If operation of this equipment in a residential area causes radio frequency interference, the user, and not Minicom Advanced Systems Limited, will be responsible.

Changes or modifications made to this equipment not expressly approved by Minicom Advanced Systems Limited could void the user's authority to operate the equipment.

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Table of Contents

Chapter 1: Introduction

Features of the Classnet Board Version:

- Internal cards save desktop space
- No additional power supply needed
- Includes the major Classnet functions
- Connect up to 99 Students

The Board Version is compatible with:

- IBM AT, or PS/2 type computers
- VGA, SVGA, or XGA video standards

Chapter 2: Overview

Advance Planning

- Draw a sketch of your proposed *Classnet Board Version* classroom including the positioning of the teacher and all students. Minicom can preview your sketches, providing general advice and further tips.
- Make provision for electrical wall sockets - if necessary, a certified electrician should prepare sufficient outlets prior to the installation of the *Classnet Board Version* classroom. Each outlet should have the same phase and a common ground.
- Consider using Line Boosters or Line Multipliers.
- Check the classroom's layout: the positioning of furniture, and lighting and ensure there is sufficient plastic duct attached to the walls for the System Cabling.

Stages of the Installation

We recommend the following guidelines:

- Ensure that the computers are installed and operate correctly. Switch on all the computers to confirm that each workstation functions. Once confirmed, switch off all the computers.
- Determine the teacher's position. Usually the teacher sits at the front of the class.

Chapter 3: The Classnet Board Version

All Classnet Board Versions are PCI type cards.

There is a card for the Teacher, and a different card for the Students.

The cards come in both - AT or PS/2 types.

Classnet Board Version for the Teacher

Figure 3-1 illustrates the Teacher *PCI Classnet Board Version*.

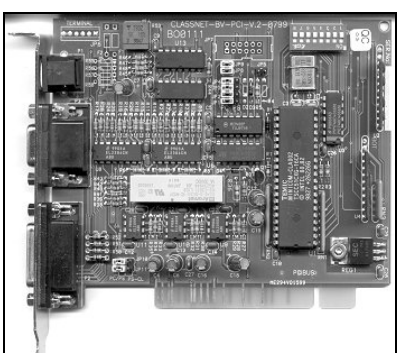

Figure 3-1 The Teacher PCI Board Version

Classnet Board Version for the Student

Figure 3-2 illustrates the Student *PCI Classnet Board Version*.

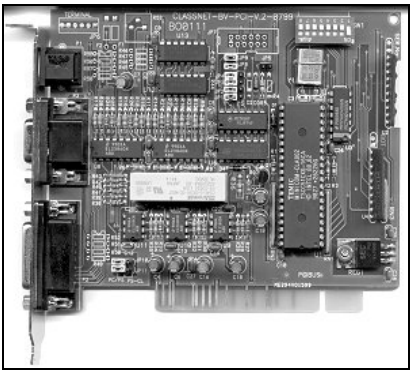

Figure 3-2 The Student PCI Board Version

Chapter 4: Setting the student ID numbers

Set the ID number on each Student Unit using dipswitches 1 to 6. See Figure 4-1. Dipswitches 7 and 8 are not activated and should always be set to the OFF position. The numbers are set using the binary number system. To set the numbers see the binary table below. The Teacher card comes with a factory pre-set ID number.

Caution! Do not set the identical ID number for two units!

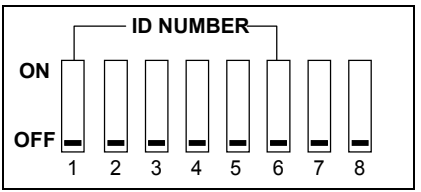

Figure 4-1 Setting the ID Number

0 = OFF, 1 = ON

The student unit ID Numbers

Student Number	Dipswitches					
	1	2	3	4	5	6
1	1	0	0	0	0	0
2	0	1	0	0	0	0
3	1	1	0	0	0	0
4	0	0	1	0	0	0

Student Number	Dipswitches					
	1	2	3	4	5	6
5	1	0	1	0	0	0
6	0	1	1	0	0	0
7	1	1	1	0	0	0
8	0	0	0	1	0	0
9	1	0	0	1	0	0
10	0	1	0	1	0	0
11	1	1	0	1	0	0
12	0	0	1	1	0	0
13	1	0	1	1	0	0
14	0	1	1	1	0	0
15	1	1	1	1	0	0
16	0	0	0	0	1	0
17	1	0	0	0	1	0
18	0	1	0	0	1	0
19	1	1	0	0	1	0
20	0	0	1	0	1	0
21	1	0	1	0	1	0
22	0	1	1	0	1	0
23	1	1	1	0	1	0
24	0	0	0	1	1	0
25	1	0	0	1	1	0
26	0	1	0	1	1	0
27	1	1	0	1	1	0
28	0	0	1	1	1	0
29	1	0	1	1	1	0
30	0	1	1	1	1	0
31	1	1	1	1	1	0
32	0	0	0	0	0	1
33	1	0	0	0	0	1
34	0	1	0	0	0	1
35	1	1	0	0	0	1

Student Number	Dipswitches					
	1	2	3	4	5	6
36	0	0	1	0	0	1
37	1	0	1	0	0	1
38	0	1	1	0	0	1
39	1	1	1	0	0	1
40	0	0	0	1	0	1
41	1	0	0	1	0	1
42	0	1	0	1	0	1
43	1	1	0	1	0	1
44	0	0	1	1	0	1
45	1	0	1	1	0	1
46	0	1	1	1	0	1
47	1	1	1	1	0	1
48	0	0	0	0	1	1
49	1	0	0	0	1	1
50	0	1	0	0	1	1
51	1	1	0	0	1	1
52	0	0	1	0	1	1
53	1	0	1	0	1	1
54	0	1	1	0	1	1
55	1	1	1	0	1	1
56	0	0	0	1	1	1
57	1	0	0	1	1	1
58	0	1	0	1	1	1
59	1	1	0	1	1	1
60	0	0	1	1	1	1
61 *	1	0	1	1	1	1
62 **	0	1	1	1	1	1
63 **	1	1	1	1	1	1

* 61 is reserved for the Projector Unit. **62 and/or 63 is reserved for the Multimedia Unit if used.

Chapter 5: PS/2 or AT compatibility and installation

There are Jumpers on each card that are factory preset to make it compatible with either AT or PS/2 type computers. These Jumpers are JP1 – JP5 and JP8 – JP9.

The Jumpers can be adjusted by opening or closing the pins, see Figure 5-1.

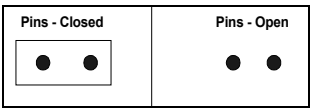

Figure 5-1 Closed and open pins

AT compatible

To make the unit AT compatible, set the Jumpers as follows:

1. Close Pins 2 and 3, on Jumpers JP1 - JP4.
2. Open JP5.
3. Close JP8 and JP9.

See Figure 5-2.

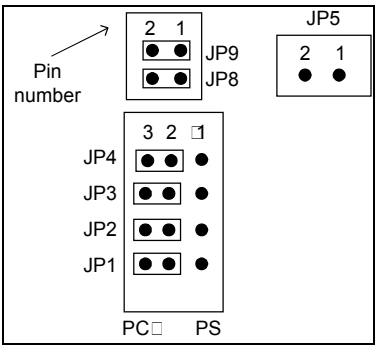

Figure 5-2 Jumper Settings for AT

PS/2 compatible

To make the unit PS/2 compatible, set the Jumpers as follows:

1. Close Pins 1 and 2, on Jumpers JP1 - JP4.
2. Close JP5.
3. Open JP8 and JP9.

See Figure 5-3.

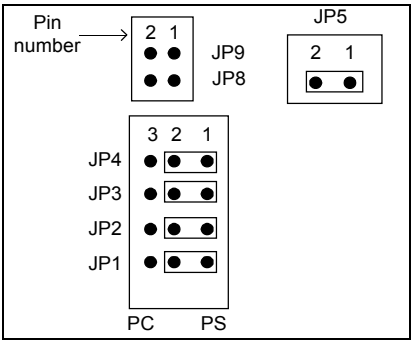

Figure 5-3 Jumper Settings for PS/2

Note! When combining the Classnet Board Version with the 3.15 or Quattro, and using a PS/2 mouse, move Jumpers JP10 and JP11 from PC/PS to PS-CL.

Pre-Installation instructions

- *Switch off all computers*
- *Disconnect the power cord from each computer*

To install all the cards

1. Remove the computer's cover.
1. Insert the card into any available PCI slot.
2. Replace the computer's cover.

Chapter 6: Connecting the Board Version System

Before connecting the *Classnet Board Version* classroom:

- *Switch off all the computers.*
- *Place cables away from fluorescent lights, air conditioners, and machines liable to generate electrical noise.*

Figures 6-1 to 6-4 below, illustrate the cable diagrams for the Teacher and Student Positions, for AT and PS/2.

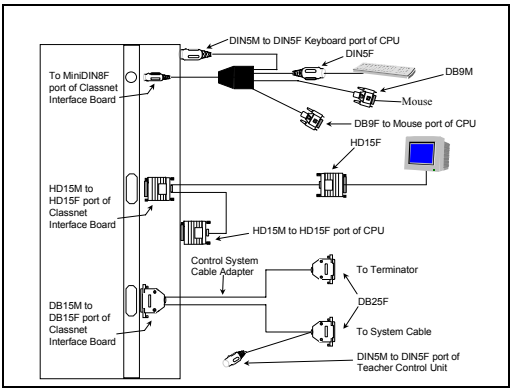

Figure 6-1 Teacher AT Cable Diagram

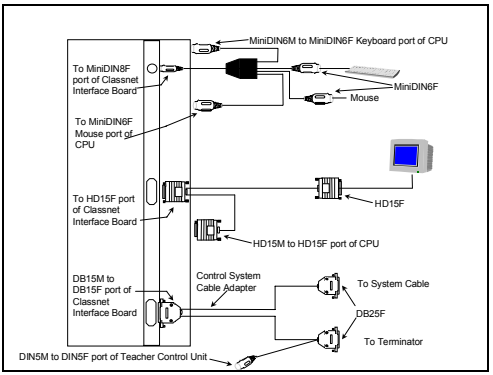

Figure 6-2 Teacher PS/2 Cable Diagram

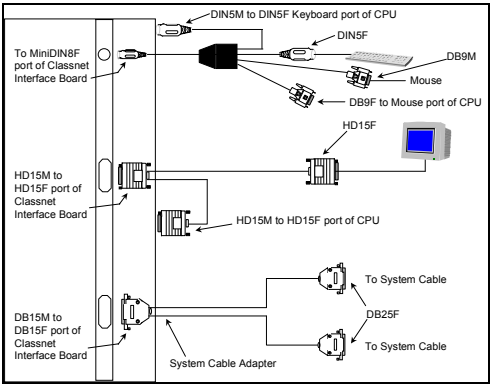

Figure 6-3 Student AT Cable Diagram

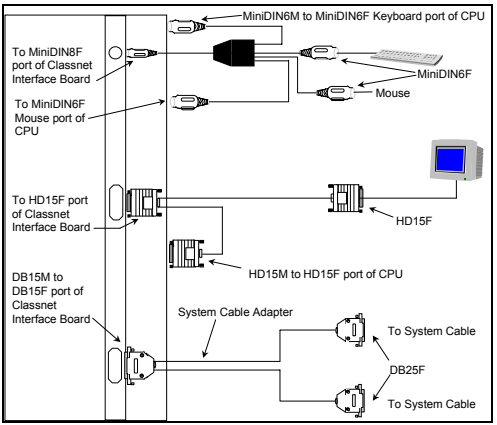

Figure 6-4 Student PS/2 Cable Diagram

Connecting the Board Version

The bracket of each category of the *Teacher unit* and of the *Student unit* appears as follows:

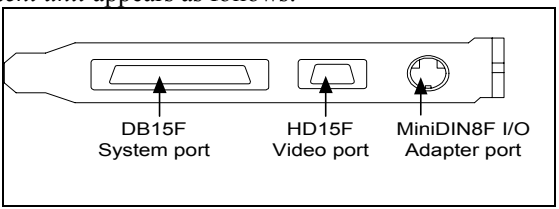

Figure 6-5 Board Version Bracket

To this port	Connect this connector	AT	PS/2
MiniDIN8F I/O Adapter	I/O Adapter Cable's MiniDIN8M	5CB10042	5CB10041
HD15F Video	Video Monitor Cable's HD15M	5CB10047	
DB15F System	System Cable Adapter's DB15M	5CB10247 - Teacher 5CB10044 - Student	

Connecting the Student

At each Student position, connect the System port (the *System Cable Adapter* and two *System Cables*), the *Video Cable* and the I*/O Adapter Cable* (for either AT or PS/2).

Connecting the System Port

Via the Student *System Cable Adapter* you can connect two different *System Cables* (*System In* and *System Out*) to the System port at each Student position as follows:

To Connect the System Cable Adapter (5CB10044)

1. Connect the Student *System Cable Adapter's* DB15M connector to the *Board Version* DB15F System port.

2. Connect one of the Student *System Cable Adapter's* DB25F connectors to a *System Cable's* DB25M connector.

3. Connect the other Student *System Cable Adapter's* DB25F connector to another *System Cable's* DB25M connector.

Figure 6-6 illustrates the *Student System Cable Adapter*. Figure 6-7 on page 6-6 illustrates the *System Cable*.

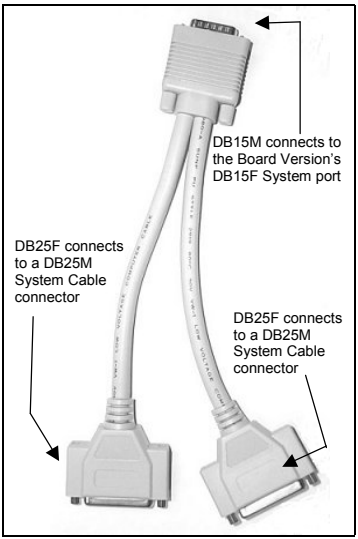

Figure 6-6 The Student System Cable Adapter - 5CB10044

Connecting the System Cable - 5CB40082

The System Cable joins all the *Student units* in the classroom together with the *Teacher unit* in a daisy-chain loop. Each System Cable has a DB25M connector attached at each end, as Figure 6-7 illustrates.

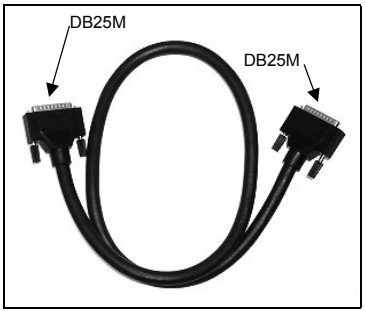

Figure 6-7 The System Cable - 5CB40082

To Connect the System Cable Among the Students

1. Connect one of the System Cable's DB25M connectors to the *System Cable Adapter's* DB25F connector, as Figures 6-8 and 6-9 illustrate.
2. Connect the other System Cable's DB25M connector to the *System Cable Adapter's* DB25F connector of the previous Student unit.
3. Connect a different System Cable's DB25M connector to the *System Cable Adapter's* DB25F other connector.
4. Connect that System Cable's other DB25M connector to the *System Cable Adapter' s* DB25F connector of the next Student unit.
5. Continue with this sequence as Figures 6-8 and 6-9 illustrate.

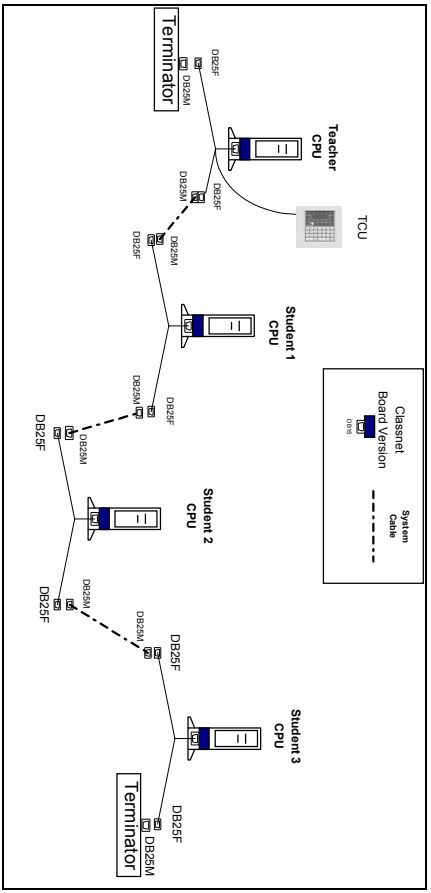

Figure 6-8 System Cable Setup. Method 1

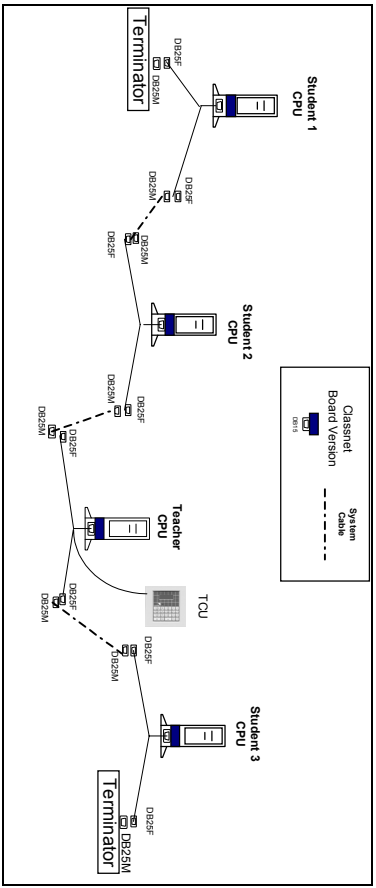

Figure 6-9 System Cable Setup. Method 2

Connecting the Video Cable - 5CB10047

You use the same Video Cable for the *Teacher position* and each of the *Student positions*.

To Connect the Video Cable

Connect the Video Cable - see Figure 6-10 - as follows:

1. Connect the Video Cable's HD15M connector to the Board Version's HD15F port.
2. Connect the Video Cable's long cable HD15M connector to the CPU's HD15F Video port.
3. Connect the Video Cable's short cable HD15F connector to the monitor.

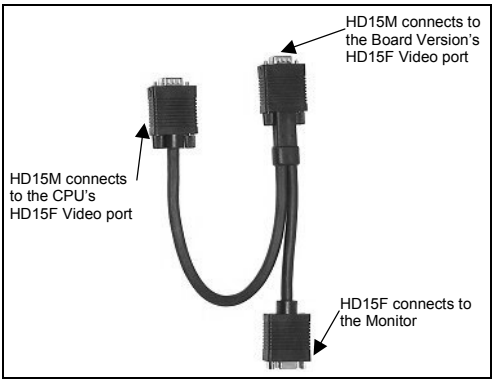

Figure 6-10 The Video Cable - 5CB10047

Connecting the I/O Adapter Cable

You use the I/O Adapter Cable to connect the mouse and keyboard to each of the Student positions. There is a different I/O Adapter Cable for AT and for PS/2 type computers.

To Connect the I/O Adapter Cable for AT - 5CB10042

Connect the I/O Adapter Cable for AT - see Figure 6-11 - as follows:

1. Connect the cable's MiniDIN8M connector to the Board Version's MiniDIN8F I/O Adapter port.
2. Connect the cable's DB9F connector to the CPU's DB9M mouse port.
3. Connect the cable's DB9M connector to the mouse.
4. Connect the cable's DIN5F connector to the keyboard.
5. Connect the cable's DIN5M connector to the CPU's DIN5F keyboard port.

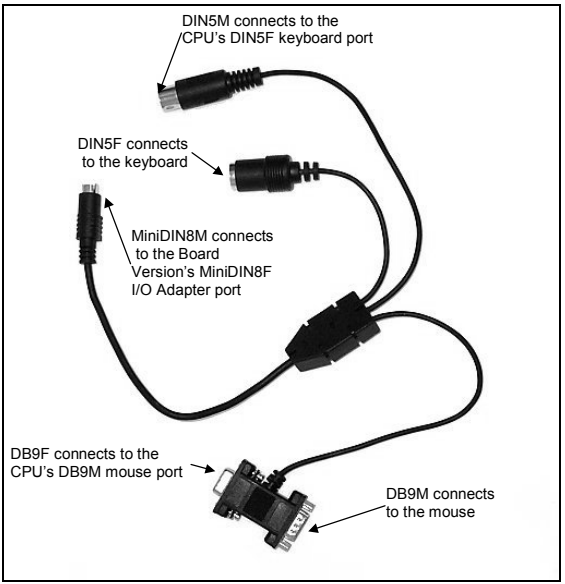

Figure 6-11 I/O Adapter Cable for AT - 5CB10042

To Connect the I/O Adapter Cable for PS/2 - 5CB10041

Connect the I/O Adapter Cable for PS/2, as Figure 6-12 illustrates, as follows:

1. Connect the cable's MiniDIN8M connector to the Board Version's MiniDIN8F I/O Adapter port.

2. Connect the cable's MiniDIN6M connector to the CPU's MiniDIN6F keyboard port.
3. Connect the cable's MiniDIN6F connector to the keyboard.
4. Connect the cable's MiniDIN6M connector to the CPU's MiniDIN6F mouse port.
5. Connect the cable's MiniDIN6F connector to the mouse.

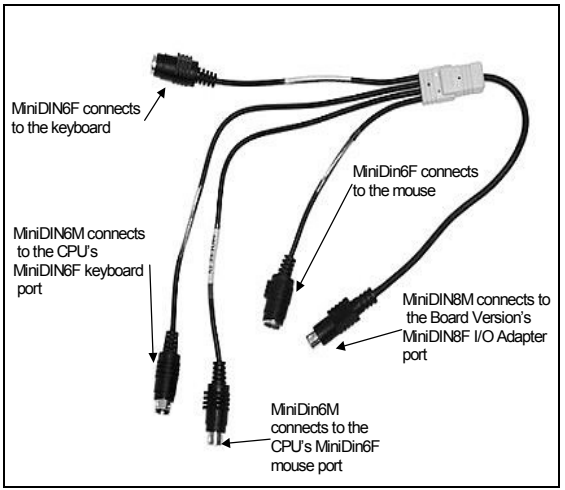

Figure 6-12 I/O Adapter Cable for PS/2 - 5CB10041

Connecting the Teacher position

At the Teacher position connect the *Teacher System Y Adapter*, the *Video Cable* and the I*/O Adapter Cable* (for either AT or PS/2).

Connecting the System Port

The Teacher System Y Adapter Cable – see Figure 6-13 - connects to the TCU.

To Connect the Teacher System Y Adapter Cable - 5CB10247

1. Connect the cable's DB15M connector to the *Board Version's* DB15F System port.
2. Connect one of the cable's DB25F connectors to a *System Cable's* DB25M connector.
3. Connect the other cable's DB25F connector to a Terminator.
4. Connect the cable's DIN5M connector to the TCU's DIN5F connector.

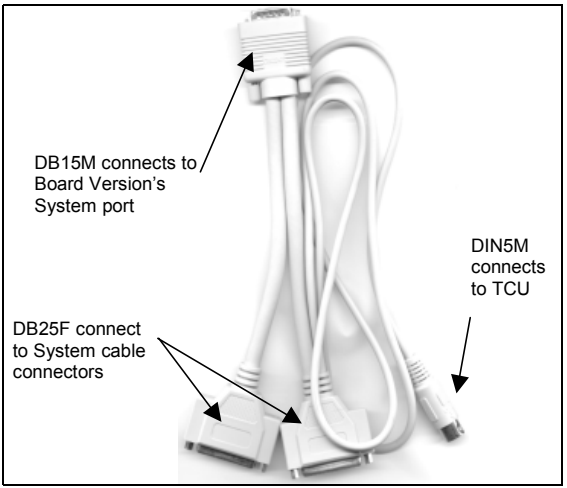

Figure 6-13 The Teacher System Y Adapter Cable (Hardware) - 5CB10247

Connecting the System Cable - 5CB40082/0

The System Cable joins the *Teacher unit* to all the *Student units* in the classroom in a daisy-chain pattern. Each System Cable has a DB25M connector attached at each end. See Figures 6-8 and 6-9 above.

To Connect the System Cable at the Teacher Position

1. Connect the System Cable's DB25M connector to one of the *Teacher System Y Adapter Cable's* DB25F connectors.
2. Connect the other System Cable's DB25M connector to the *System Cable Adapter's* DB25F connector of the Student unit.
3. Connect the *Teacher System Y Adapter Cable's* other DIN5M connector, to the respective port on the TCU (DIN5F).

Connecting the Video Cable - 5CB10047

You use the same Video Cable for the *Teacher position* as you do for each of the *Student positions*. Refer to page 6-9 for details.

Connecting the I/O Adapter Cable

You use the same I/O Adapter Cable for the *Teacher position* as you do for each of the *Student positions*. Refer to pages 6-10 to 6-12 for details.

Connecting the Terminator

Install a Terminator - 5CB10117, as Figure 6-14 illustrates, at both ends of the System Line. A Terminator is a connector that includes 75 Ω resistors. These resistors absorb any signals that reach the end of the cable and prevent them from reflecting back into the cable and causing interference.

To connect a Terminator

Connect a Terminator's DB25M connector to one of the DB25F connectors of the System Y Adapter cable of the first and last units in the chain.

Figure 6-14 The Terminator - 5CB10117

Chapter 7: Board Version Operational Setup

You connect a TCU and/or install the ***AristoClass*** *Software*. To install the software refer to the ***AristoClass*** User Guide.

Connecting the TCU

Figure 7-1 illustrates the TCU.

Figure 7-1 The TCU

To connect the TCU

1. Connect the *Teacher System Y Adapter Cable's* DIN5M connector to the TCU's DIN5F connector. See Figure 5-12.
2. Connect the power adapter to the 9VAC Power connector and connect the power adapter to the electricity supply. Switch on.

To operate the TCU, refer to the *Classnet Operating Guide*.

Appendix A: Technical Specifications

Resolution

Transfer supports up to 1024 x 768 SVGA Video Bandwidth: Not less than 100 MHz

Maximum Number of Units

Regular configuration: 63 Special configuration: 99

System Requirements

Keyboard	PC/AT – DIN5, PS/2 - MiniDIN6
Mouse	PC/AT – DB9, PS/2 - MiniDIN6
Video	SVGA, VGA, or XGA - HD15
Temperature	0° to 40° Celsius For extended environmental conditions, contact us
Humidity	0% to 85% non-condensing

Unit Dimensions

Teacher Board Versions	
PCI	133.35 mm x 106.70 mm
PCI Audio	167.60 mm x 106.70 mm
Student Board Versions	
PCI	133.35 mm x 106.70 mm
PCI Audio	167.60 mm x 106.70 mm

TCU

Dimensions	91 mm x 218 mm x 229 mm

Minicom Advanced Systems Ltd.	**USA**	**German Europe**	**Italy**
International HQ Jerusalem Israel	North American HQ Linden, New Jersey	Zurich, Switzerland	Rome
Tel: +972 2 651 8593 minicom@minicom.com	Tel: + 1 908 486 2100 info.usa@minicom.com	Tel: + 41 1 455 6220 info.german@minicom.com	Tel: + 39 06 8209 7902 info.italy@minicom.com

Web site - www.minicom.com **Customer service - minicom@minicom.com**