USER MANUAL

Orchid DM

USER MANUAL

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Telindus Technical Publications – Geldenaaksebaan 335 · B-3001 Leuven · Belgium – tel. +32 16 382011

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This equipment, for safety and hygiene purposes, complies with the specific provisions contained in *ARAB/RGPT 54 quater 3.1* (RD 20 06 1975, Art.1, Section X, Accident Prevention Policy).

Safety requirements

The interfaces on the Orchid DM should only be connected to circuit types as listed below.

Port	Interface	Circuit
RJ45	DCE port	SELV
RJ45	DTE ports	SELV

Statements

http://www.telindus.com/products/conformity/

Hereby, TELINDUS declares that this Orchid DM is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Bij deze verklaart TELINDUS dat deze Orchid DM in overeenstemming is met de essentiële vereisten en andere relevante bepalingen van Richtlijn 1999/5/EC.

Par la présente, TELINDUS déclare que ce Orchid DM est en conformité avec les exigences essentielles et autres articles applicables de la Directive 1999/5/EC.

Hiermit, TELINDUS erklärt daß dieser Orchid DM ist in Fügsamkeit mit den wesentlichen Anforderungen und anderen relevanten Bereitstellungen von Direktive 1999/5/EC.

Mediante la presente, TELINDUS declara que el Orchid DM cumple con los requisitos esenciales y las demás prescripciones relevantes de la Directiva 1999/5/CE.

A TELINDUS declara que o Orchid DM cumpre os principais requisitos e outras disposições da Directiva 1999/5/EC.

Col presente, TELINDUS dichiara che questo Orchid DM è in acquiescenza coi requisiti essenziali e stipulazioni attinenti ed altre di Direttivo 1999/5/EC.

Με το παρόν, η TELINDUS δηλώνει ότι αυτό το Orchid DM είναι συμμορφούμενο με τις βασικές απαιτήσεις και με τις υπόλοιπες σχετικές διατάξεις της οδηγίας 1999/5/EC.

Preface

Organisation of this manual

This manual contains two main parts.

Part	This part …
User manual	shows you how to install and connect the Orchid DM.
Annexes	gives additional information.

The following table gives an overview of the chapters in the user manual.

Chapter	This chapter …
1	introduces the Orchid DM.
2	teaches you how to install the Orchid DM.
3	teaches you how to connect the Orchid DM. It also describes the front panel LEDs.
4	gives more information on the different cables you can use to interconnect the Orchid DM and other Telindus devices. It also presents some practical examples.
5	lists the technical specifications of the Orchid DM.

The following table gives an overview of the annexes.

Annex	This annex …
Annex A	gives a list of abbreviations.
Annex B	shows ordering information.

Conventions used in this manual

Typographical conventions

The following typographical conventions are used in this manual.

The format …	is used to indicate …
Normal	normal text.
Italic	• new or emphasised words • file names and directory paths, e.g. *C:\Program Files\TMA\bin\Tma.exe* • references to other parts in the manual, e.g. *Refer to Chapter xx - Technical specifications*
Blue underlined	a hyperlink to a web site, e.g. http://www.telindus.com

Icons

The following icons are used throughout the manual.

Icon	Name	Description
	Remark	Useful information or tips.
	Caution	Read the text that follows carefully in order to avoid damage to the device.
	Warning	Read the text that follows carefully in order to avoid injury.

Your feedback

Your satisfaction about this purchase is an extremely important priority to all of us at Telindus. Accordingly, all electronic, functional and cosmetic aspects of this new unit have been carefully and thoroughly tested and inspected. If any fault is found with this unit or should you have any other quality-related comment concerning this delivery, please submit the Quality Comment Form on our web page http://www.telindus.com/products/telindus.phtml.

Table of contents

List of figures

List of tables

User manual

1. What is the Orchid DM?

The Orchid DM is a low-cost asynchronous data concentrator. In other words, it is a device for making digital multipoints on management level. Concrete, the Orchid DM concentrates management information from up to six connected Telindus devices to one main port.

A typical application is the concentration of management information on a location where the cost of a CN4 card nest and / or an Orchid 1003 LAN is too high.

The main features of the Orchid DM are:

- The Orchid DM is a digital multipoint device for concentrating V.24 serial data. Data on the main V.24 port is transparently distributed to and collected from 6 secondary V.24 ports.
- Asynchronous transmission up to 19200 bps is possible.
- Several Orchid DMs can be cascaded.
- The Orchid DM is powered by an external power supply which is available in both a 115/230 Vac version and a 48 Vdc version.

2. Installing the Orchid DM

This chapter gives some important safety instructions. It also explains how to install the Orchid DM.

You are advised to read this chapter in a sequential manner, from the beginning to the end, without skipping any part. By doing so, your Orchid DM will be completely installed and ready to connect when you reach the end of this chapter.

The following table gives an overview of this chapter.

2.1 Safety instructions

IMPORTANT SAFETY INSTRUCTIONS

Unplug the unit from the wall power outlet or remove it from the card nest before installing, adjusting or servicing.

ACHTUNG! WICHTIGE SICHERHEITSINSTRUKTIONEN

Vor sämtlichen Arbeiten am Gerät (Installation, Einstellungen, Reparaturen etc.) sollten Sie den Netzstecker aus der Steckdose ziehen.

SAFETY WARNING

To avoid damage to the equipment, please observe all procedures described in this chapter.

SICHERHEITSBESTIMMUNGEN

Um eine Beschädigung des Gerätes zu verhindern, beachten Sie bitte unbedingt die Sicherheitsbestimmungen, die in diesem Abschnitt beschrieben werden.

2.2 Unpacking

Checking the shipping carton

Rough handling during shipping causes most early failures. Before installation, check the shipping carton for signs of damage:

- If the carton box is damaged, please place a claim with the carrier company immediately.
- If the carton box is undamaged, do not dispose of it in case you need to store the unit or ship it in the future.

Package contents

The box should contain the following items:

- Orchid DM
- TMA CD-ROM (containing this User and Reference manual in PDF format).

2.3 Selecting a site

WARNING

Always place the unit on its feet without blocking the air vents.

Do not stack multiple units directly onto each other, as stacking can cause heat build-up that could damage the equipment.

ACHTUNG

Stellen Sie das Gerät niemals seitlich, sondern nur auf den Füßen auf und achten Sie darauf, daß die Lüftungsschlitze an der Seitenverkleidung frei bleiben.

Stapeln Sie nicht mehrere Geräte direkt übereinander, dies kann zu einem Hitzestau führen.

Install the unit in an area free of extreme temperatures, humidity, shock and vibration. Position it so that you can easily see and access the front panel and its control indicators. Leave enough clearance at the back for cables and wires. Position the unit within the correct distances for the different accesses and within 2m of a power outlet.

2.4 Installation and connection precautions

ESD WARNING

The circuit boards are sensitive to electrostatic discharges (ESD) and should be handled with care. It is advisable to ensure an optimal electrical contact between yourself, the working area and a safety ground before touching any circuit board. Take special care not to touch any component or connector on the circuit board.

EMC WARNING

EMC compliant installation

The complete Telindus range is fully EMC compliant. To ensure compliance with EMC directive 89/336/EEC, shielded cables or ferrite beads have to be used.

NOTE

This equipment may be powered by an IT power system.

ANMERKUNG

Das Gerät kann gespeist wurden durch ein IT power System.

3. Connecting the Orchid DM

This chapter explains how to connect the Orchid DM. It also describes the front panel LED indicators.

You are advised to read this chapter in a sequential manner, from the beginning to the end, without skipping any part. By doing so, your Orchid DM will be completely installed and ready to use when you reach the end of this chapter.

The following table gives an overview of this chapter.

3.1 Rear view of the Orchid DM

Below, a rear view of the Orchid DM is given:

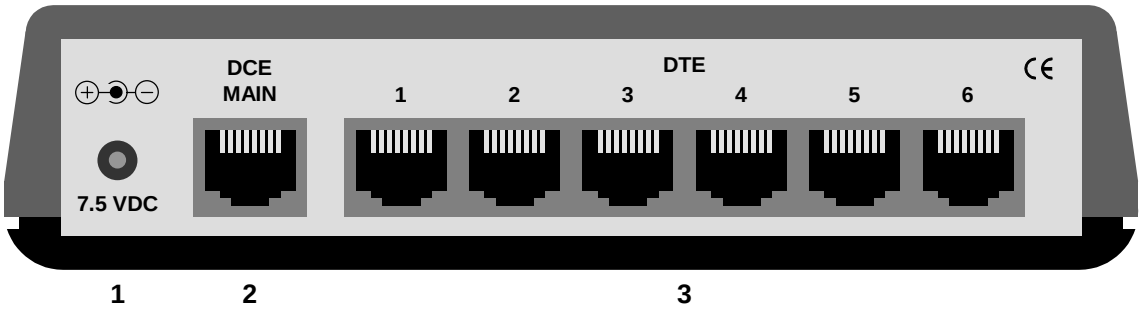


Figure 3.1: Rear view of the Orchid DM

3.2 Connecting the Orchid DM

The following table gives an overview of the parts located at the back of the Orchid DM:

Part	Label	Description
1	7.5 VDC	This is the power input. Insert the plug of the external power supply in this socket.
2	DCE MAIN	This is the main port. Connect the device to which you want to send the collected management information to this port.
3	DTE 1 … 6	These are the six secondary ports. Connect the devices from which you want to collect the management information to this port.

Table 3.1: Parts located at the back of the Orchid DM

3.3 Connecting the Orchid DM – an example

As an example of how to connect the Orchid DM, the following figure shows an Orchid DM set-up:

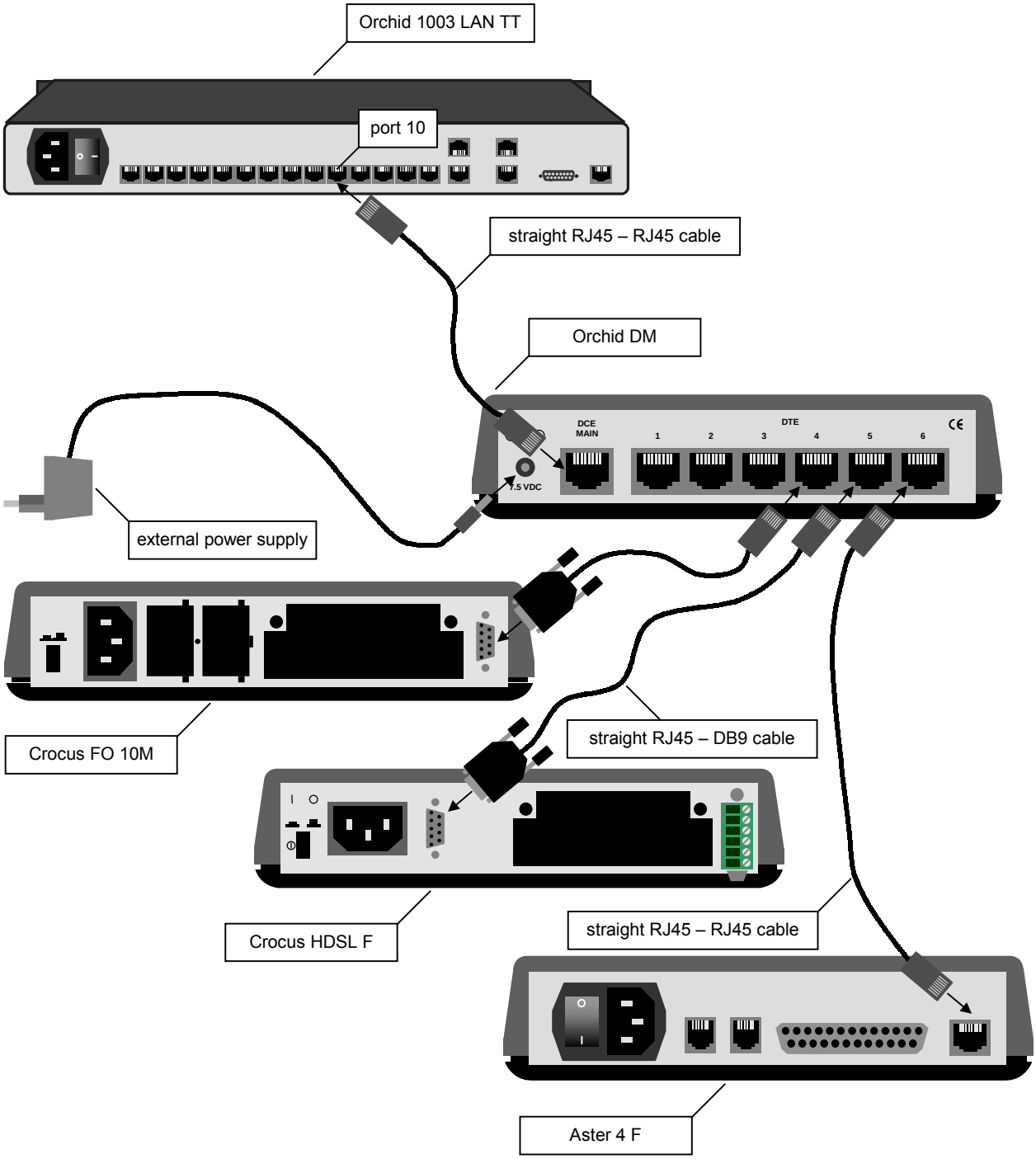


Figure 3.2: An Orchid DM set-up – an example

For more information on the different cables and their corresponding sales codes, refer to *Section 4.1 - Interconnection cables overview* or *Annex B: product information*.

3.4 Front panel LED indicators

This section gives an overview of the front panel LEDs and what they indicate.

When all the connections are made and the Orchid DM is powered, the LEDs on the front panel reflect the actual status of the device. The following figure shows the front panel LED indicators of the Orchid DM:

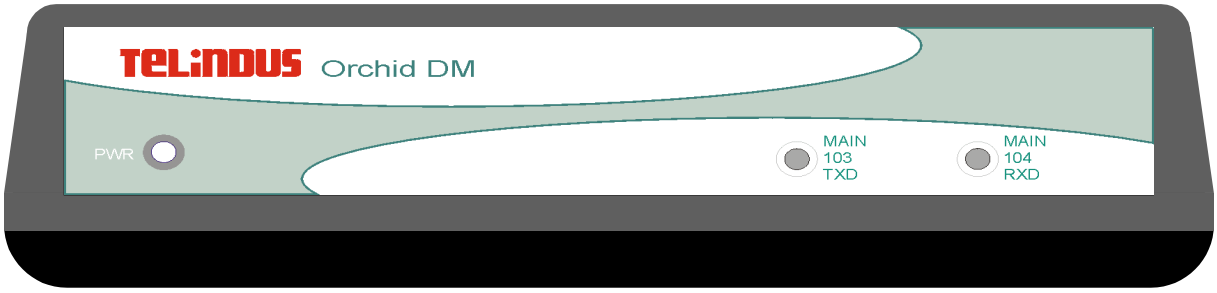


Figure 3.3: Front panel LED indicators of the Orchid DM

The following table explain what the front panel LEDs indicate:

Label	Colour	Description
PWR	green	The power LED indicates whether the Orchid DM is powered.
MAIN 103 TXD	green	The MAIN Transmit LED monitors the transmit data of the DCE port.
MAIN 104 RXD	green	The MAIN Receive LED monitors the receive data of the DCE port.

Table 3.2: Description of the front panel LED indicators

4. The different interconnection cables

This chapter gives more information on the different cables you can use to interconnect the Orchid DM and other Telindus devices. First an overview table is given, then some practical examples are presented.

The following table gives an overview of this chapter.

4.1 Interconnection cables overview

The following table gives an overview of the cables that have to be used to interconnect the Orchid DM with other Telindus devices:

Device – port (connector type)	Orchid DM port	Cable to be used	Cable sales code
Orchid 1003 LAN – async port xx (RJ45)	DCE MAIN	straight RJ45 – RJ45	141986, 134907, 141987, 141988
Orchid 1003 LAN CV – async port 1 (DB9 Female)	DCE MAIN	crossed RJ45 – DB9 Male	141972, 141973, 142006, 141975
Aster 4 Flash – NMS (RJ45)	DCE MAIN	crossed RJ45 – RJ45	138453
	DTE	straight RJ45 – RJ45	141986, 134907, 141987, 141988
Crocus HS – NMS (RJ45)	DTE	straight RJ45 – RJ45	141986, 134907, 141987, 141988
Telindus device – standard NMS / CTRL / AUX (DB9 Female)	DCE MAIN	crossed RJ45 – DB9 Male	141972, 141973, 142006, 141975
	DTE	straight RJ45 – DB9 Male	149220
Modem for remote management connection – data port (DB25 Female)	DCE MAIN	crossed RJ45 – DB25 Male	142002, 142003, 142004, 142005
Cascading two Orchid DMs: Orchid DM – DTE port (RJ45)	DCE MAIN	straight RJ45 – RJ45	141986, 134907, 141987, 141988

Table 4.1: Interconnection cables overview

4.2 Example 1 – an extended management link

What is an extended management link?

An extended management link is when two modems their auxiliary connectors (usually labelled NMS, CTRL or AUX) are connected back-to-back with a crossed cable. By doing so, the *extended* modem is also manageable over the modem link.

The following figure clarifies this:

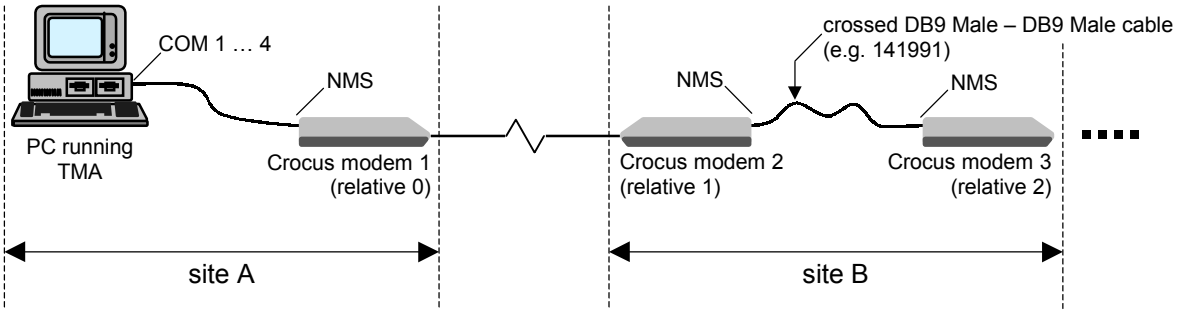


Figure 4.1: An extended management link

In this case all three modems can be reached by the management application. When you want to open a TMA session on the …

- Crocus modem 1, then enter relative address 0.
- Crocus modem 2, then enter relative address 1.
- Crocus modem 3, then enter relative address 2.

Also the remote counterpart of Crocus modem 3 can be reached in this way (relative address 3). If this modem also has an extended management link, you can access modems even further in the network.

Continued on next page

Example 1 – an extended management link (continued)

An extended management link with the Orchid DM

Suppose that in site B of *Figure 4.1: An extended management link* you have three *extended* modems that you want to manage using TMA. The management of three modems may not justify the cost of a CN4 card nest and an Orchid 1003 LAN. In that case you can use the Orchid DM to collect or concentrate these modems their management information and send it over the management channel of the data link between site A and site B.

The following figure clarifies this:

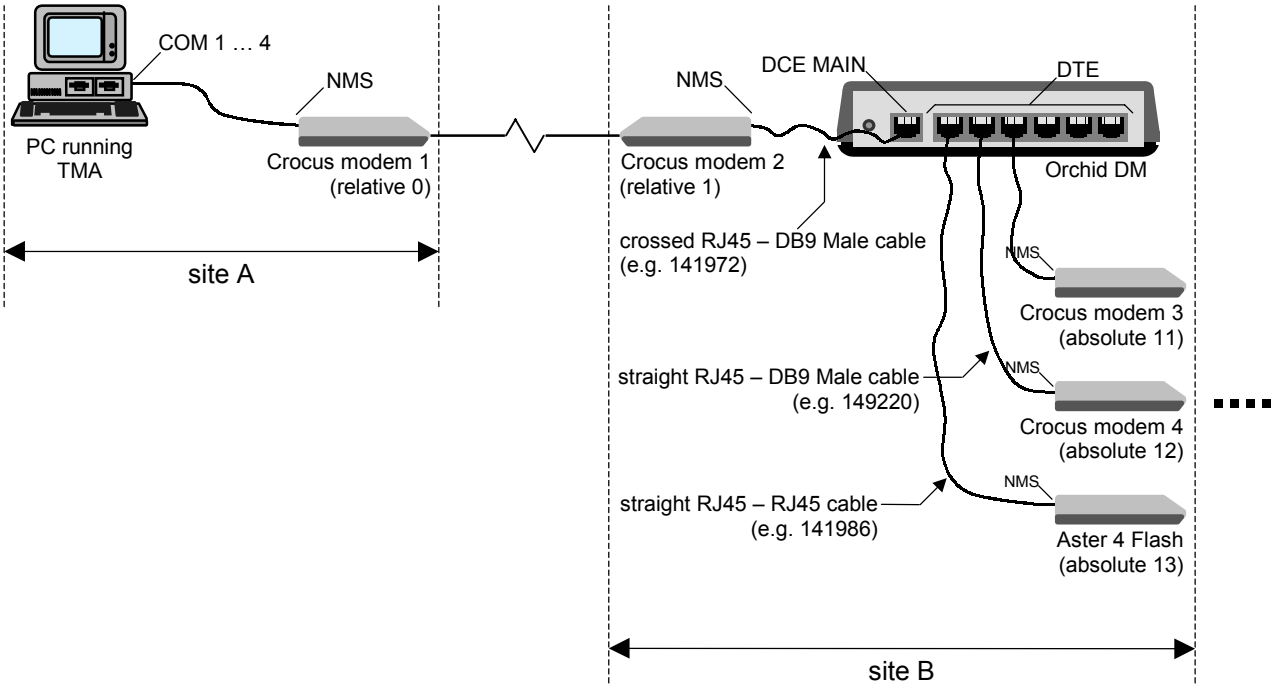


Figure 4.2: An extended management link with the Orchid DM

For a complete overview of the sales codes of the cables to interconnect the Orchid DM, refer to *Table 4.1: Interconnection cables overview*.

In this case all the modems can be reached by the management application. However, to be able to reach the modems situated after the Orchid DM, they have to be assigned an absolute address. For most Telindus devices this is done with the configuration attribute `cms2Address`. Refer to the manual of the device in question.

In the example above, when you want to open a TMA session on the …

- Crocus modem 1, then enter relative address 0.
- Crocus modem 2, then enter relative address 1.
- Crocus modem 3, then enter absolute address 11.
- Crocus modem 4, then enter absolute address 12.
- Aster 4 Flash, then enter absolute address 13.

Also the remote counterparts of Crocus modem 3, Crocus modem 4 and the Aster 4 Flash can be reached, provided also these modems are assigned an absolute address.

4.3 Example 2 – Orchid 1003 LAN asynchronous port extension

To be able to manage large networks, an intelligent management concentrator is needed. The Orchid 1003 LAN is such a management concentrator. The Telindus devices can all be managed by the Orchid 1003 LAN.

Card Version devices that reside in the CN4 card nest are managed through the high speed NMS bus between the Orchid 1003 LAN and the CN4 card nest. Table Top devices on the other hand are managed through an asynchronous connection between the Orchid 1003 LAN and the Table Top device. For this purpose, the Orchid 1003 LAN has asynchronous ports. The Orchid 1003 LAN …

- Table Top has 14 RJ45 asynchronous ports.
- Card Version has one DB9 (port 1) and one RJ45 (port 2) asynchronous port.

If this amount of ports does not suffice (especially for the Orchid 1003 LAN CV), the Orchid DM can be used to extend the number of asynchronous ports of the Orchid 1003 LAN.

The following figure clarifies this:

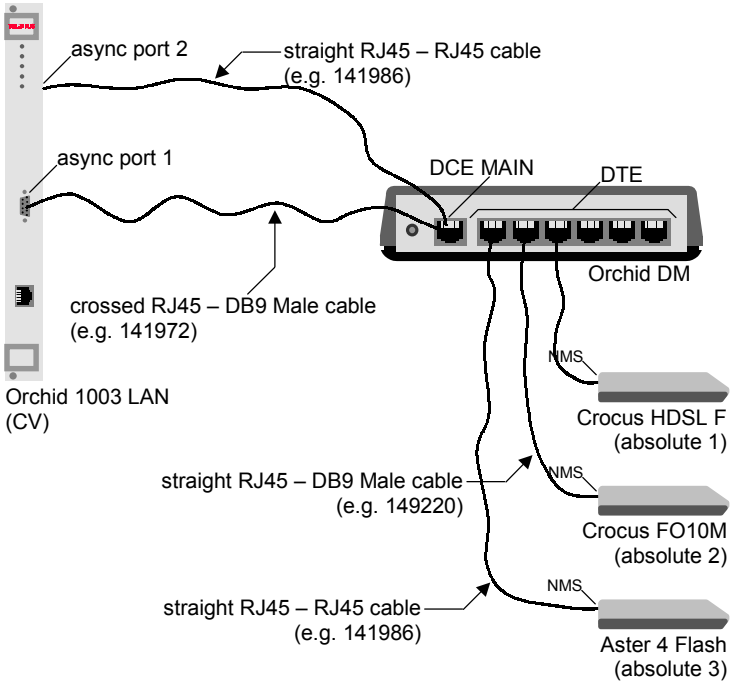


Figure 4.3: Orchid 1003 LAN asynchronous port extension using the Orchid DM

For a complete overview of the sales codes of the cables to interconnect the Orchid DM, refer to *Table 4.1: Interconnection cables overview*.

Also in this case, assign absolute addresses to the devices situated behind the Orchid DM.

4.4 Example 3 – a remote management connection

Suppose you have some modems in a remote site (site B) and you want to manage these modems using an asynchronous port of the Orchid 1003 LAN located in the central site (site A). In that case you could set up a dedicated remote management connection.

This remote management connection could be a modem link using modems with a V.24 DTE interface and this between the asynchronous port of the Orchid 1003 LAN and the DCE MAIN port of the Orchid DM.

The following figure clarifies this:

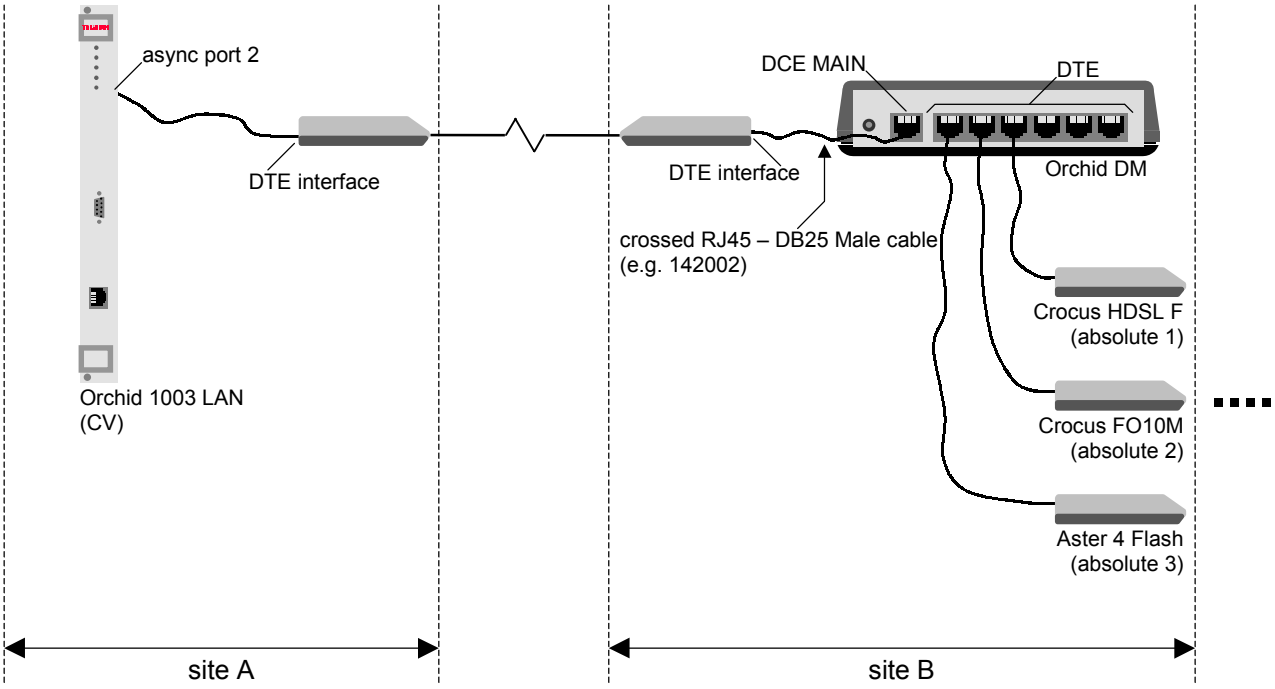


Figure 4.4: A remote management connection with the Orchid DM

For a complete overview of the sales codes of the cables to interconnect the Orchid DM, refer to *Table 4.1: Interconnection cables overview*.

Also in this case, assign absolute addresses to the devices situated behind the Orchid DM.

4.5 Example 4 – cascading Orchid DMs

In case one Orchid DM is not sufficient for your application, you can connect one or more Orchid DMs to each other. You have to cascade these Orchid DMs as shown in the following figure:

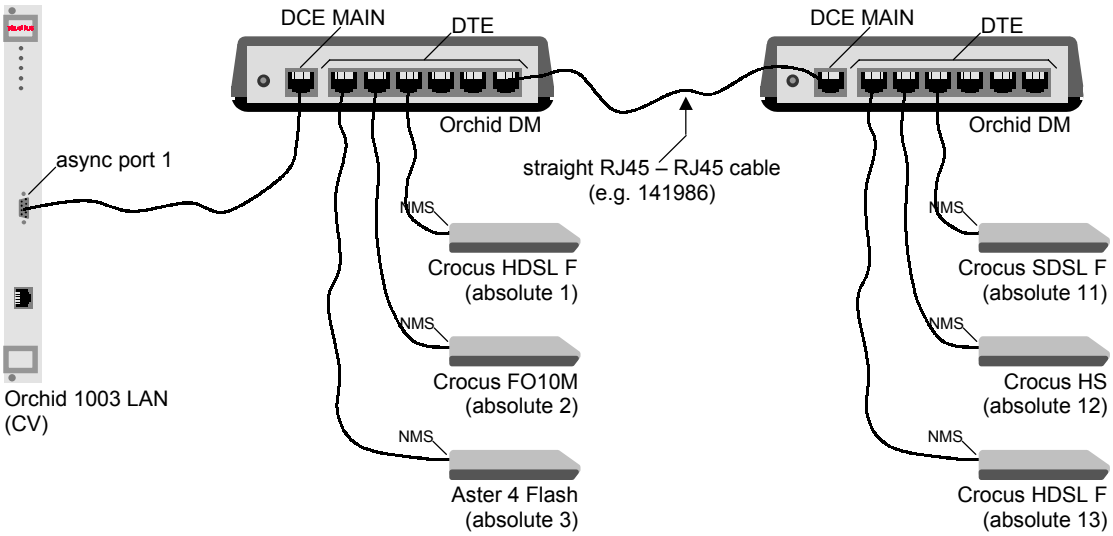


Figure 4.5: Cascading Orchid DMs

For a complete overview of the sales codes of the cables to interconnect the Orchid DM, refer to *Table 4.1: Interconnection cables overview*.

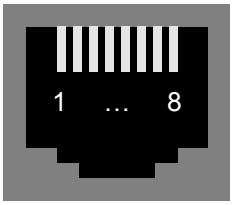
Also in this case, assign absolute addresses to the devices situated behind the Orchid DM.

5. Technical specifications

This chapter gives the technical specifications of the Orchid DM. The following table gives an overview of this chapter.

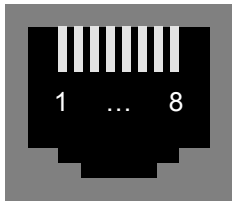
5.1 DCE MAIN port

The following table shows the connector layout of the DCE MAIN port RJ45 connector.

Pin	Signal	I/O	Figure
1	-	-	
2	-	-	
3	RXD	output	
4	-	-	
5	GND	-	
6	TXD	input	
7	-	-	
8	-	-	

5.2 DTE port 1 … 6

The following table shows the connector layout of the DTE port RJ45 connector.

Pin	Signal	I/O	Figure
1	-	-	
2	-	-	
3	RXD	input	
4	-	-	
5	GND	-	
6	TXD	ouput	
7	-	-	
8	-	-	

5.3 Power requirements

The power requirements are as follows:

- Input voltage : 7.5 Vdc
- Maximum current : 45 mA

5.4 Mechanical dimensions

The mechanical dimensions are as follows:

- Height : 38 mm
- Width : 150 mm
- Depth : 250 mm
- Weight : 1 kg

5.5 Environmental requirements

The environmental requirements are as follows:

Parameter	Description
ambient operational temperature	-10°C to 50°C
storage temperature	-25°C to +70°C
maximum altitude	3000 m
relative humidity	0% to 95% non-condensing
safety	• EN60950 ed 2:1992 + A1:1993 + A2:1993 + A3:1996 + A4:1997 + A11:1997 • Safety Class 3 equipment (for external power supply).
EMC	• EN55022 B:1994 + A1:1995 • EN61000-4-2:1995 ESD • EN61000-4-3:1995 Radiated immunity • EN61000-4-4:1995 EFT/Burst • EN61000-4-5:1995 Surge • EN61000-4-6:1995 Conducted immunity • EN61000-4-8:1993 Power magnetic field immunity • EN61000-4-11:1994 Voltage dips & drops • ENV50204:1995 Radiated immunity against digital radio telephone

Annexes

Annex A: abbreviations

The following table gives a list of abbreviations and their description.

Abbreviation	Description
bps	bits per second
CN4	Card Nest 4
CTRL	ConTRoL
CV	Card Version
DCE	Data Communications Equipment
DTE	Data Terminal Equipment
EMC	Electro Magnetic Compatibility
ESD	ElectroStatic Discharge
HDSL	High bit rate Digital Subscriber Line
LED	Light Emitting Diode
NMS	Network Management System
PWR	Power
SDSL	Symmetric Digital Subscriber Line
SELV	Safety Extra Low Voltage
TMA	Telindus Maintenance Application
TNV	Telecom Network Voltage
TT	Table Top

Annex B: product information

The following table displays the product information of the Orchid DM and related items.

Sales code	Product name	Description
171295	Orchid DM	Orchid DM without external power adapter. Requires additionally an external power adapter.
171302	230Vac power adapter	Adapter plug for 230Vac power feeding. Can be delivered as separate sales item to feed the Orchid DM with 230Vac.
171303	115Vac power adapter	Adapter plug for 115Vac power feeding. Can be delivered as separate sales item to feed the Orchid DM with 115Vac.
171304	48Vdc power adapter	Adapter plug for 48Vdc power feeding. Can be delivered as separate sales item to feed the Orchid DM with 48Vdc.
172920	Orchid DM User manual	Manuals are delivered with the product in electronic format (CD-ROM) for environmental reasons. If however a hardcopy (print-out) of the manual is required, this sales item can be used.

Continued on next page

Annex B: product information (continued)

The following table displays the product information of the cables used to interconnect the Orchid DM.

Sales code	Product name	Description
141986	CBL RJ45 – RJ45 2M	Cable for connection between Orchid DM DTE port and Aster 4 Flash or Crocus HS NMS port or between Orchid DM DCE port and Orchid 1003 LAN RJ45 async port (2 meter).
134907	CBL RJ45 – RJ45 3M	Cable for connection between Orchid DM DTE port and Aster 4 Flash or Crocus HS NMS port or between Orchid DM DCE port and Orchid 1003 LAN RJ45 async port (3 meter).
141987	CBL RJ45 – RJ45 4M	Cable for connection between Orchid DM DTE port and Aster 4 Flash or Crocus HS NMS port or between Orchid DM DCE port and Orchid 1003 LAN RJ45 async port (4 meter).
141988	CBL RJ45 – RJ45 5M	Cable for connection between Orchid DM DTE port and Aster 4 Flash or Crocus HS NMS port or between Orchid DM DCE port and Orchid 1003 LAN RJ45 async port (5 meter).
149220	CBL RJ45 – DB9M 2M	Cable for connection between Orchid DM DTE port and standard NMS port (2 meter).
138453	CBL X RJ45 – RJ45 2M	Cable for connection between Orchid DM DCE port and Aster 4 Flash.
141972	CBL X RJ45 – DB9M 2M	Cable for connection between Orchid DM DCE port and standard NMS port or between Orchid DM DCE port and Orchid 1003 LAN (CV) DB9 async port (2 meter).
141973	CBL X RJ45 – DB9M 3M	Cable for connection between Orchid DM DCE port and standard NMS port or between Orchid DM DCE port and Orchid 1003 LAN (CV) DB9 async port (3 meter).
142006	CBL X RJ45 – DB9M 4M	Cable for connection between Orchid DM DCE port and standard NMS port or between Orchid DM DCE port and Orchid 1003 LAN (CV) DB9 async port (4 meter).
141975	CBL X RJ45 – DB9M 5M	Cable for connection between Orchid DM DCE port and standard NMS port or between Orchid DM DCE port and Orchid 1003 LAN (CV) DB9 async port (5 meter).
142002	CBL X RJ45 – DB25M 2M	Cable for connection between Orchid DM DCE port and a modem for remote connection of management data.
142003	CBL X RJ45 – DB25M 3M	Cable for connection between Orchid DM DCE port and a modem for remote connection of management data.
142004	CBL X RJ45 – DB25M 4M	Cable for connection between Orchid DM DCE port and a modem for remote connection of management data.
142005	CBL X RJ45 – DB25M 5M	Cable for connection between Orchid DM DCE port and a modem for remote connection of management data.