Guntermann & Drunck GmbH

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G&D CATpro2-DVI-UC

Installation Guide

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Contents

Safety guidelines

Please read the following safety guidelines attentively before you start running the G&D product. The guidelines help to avoid damage to the product and prevent possible violations.

Inform all persons that use this equipment in detail about these safety guidelines.

Observe all warnings or operating instructions put on the device or stated in this operating guide.

⚠ **Avoid the risk of electric shock**

To avoid the risk of electric shock, do not open the device or remove the covers. If service is required, please contact our technicians.

⚠ **Disconnect the main power plug or the power supply before installation**

Before installing the device, ensure that it has been disconnected from the power source. Disconnect the main power plug or the device's power supply.

⚠ **Ensure constant access to the power plugs**

Ensure during the installation of the devices that the power plugs remain accessible.

⚠ **Do not cover the ventilation openings**

Ventilation openings prevent the device from overheating. They are not to be covered.

⚠ **Avoid the risk of tripping over cables**

Ensure that there is no risk of tripping over cables.

⚠ **Only use a grounded electrical outlet**

Operate this device by using a grounded electrical outlet.

⚠ **Use only the provided G&D power pack**

Operate this device with the provided G&D power pack or with the power packs listed in the operating manual.

⚠ **Operate the device only in the intended area of application.**

This device has been designed for indoor use. Do not expose it to extreme cold, heat or humidity.

The *CATpro2-DVI-UC* target module

The *CATpro2-DVI-UC* target module enables integrating a computer with digital video output into one or two CATCenter systems.

> The computer, that is connected to the CATCenter system through the target module, is refered to as *target* within the CATCenter system.

The computer can comfortably be operated remotely through the user modules of the CATCenter system.

Scope of delivery

- 1 x CATpro2-DVI-UC
- 1 x DVI-D video cable (2 metres)
- 2 x USB cable (2 metres)
- 1 x Installation Guide

Required accessories

- One or more category 5 (or better) twisted pair cables to connect the target module to one or two CATCenter systems.

Installation

Interfaces on the front panel

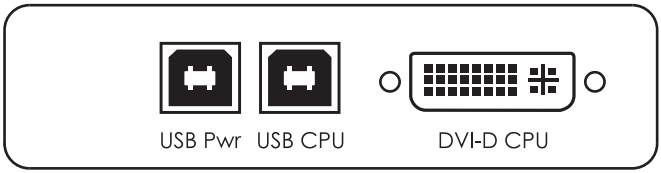


Figure 1: Front view of the *CATpro2-DVI-UC target module*

USB Pwr: If you want to supply the target module with power by using *two* USB interfaces, connect one of the computer's USB interfaces to this interface.

The device can be supplied with power using *two* of the computer's USB interfaces if both the *USB Pwr* and the *USB CPU* interface are connected to the target module.

The user is enabled to apply other possibilities to supply the target module with power:

- connect the *optional* AC adapter to the *Power In* interface.
- connect an *optional* Power Loop cable to the *Power In* interface.

The *Power In* interface described on the following page and the chapter *Power supply via Power Loop cables* on page 10 provide further information regarding this topic.

USB CPU: The console's keyboard and mouse signals are transmitted to the computer using this interface.

Connect one of the computer's USB interfaces to this interface.

DVI-D CPU: Insert the supplied DVI-D video cable into this interface and connect it to the computer's graphic output.

Interfaces on the back panel

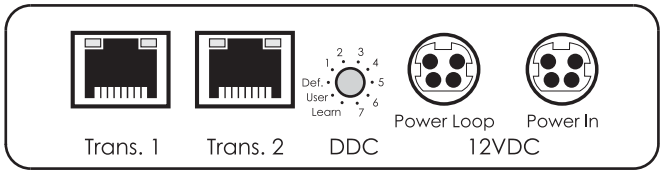


Figure 2: Back view of the *CATpro2-DVI-UC target module*

The target module provides two *Trans.* interfaces that enable integrating this target module into two *different* CATCenter systems.

Only connect one of the target module's *Trans.* interfaces per CATCenter system.

The user is enabled to connect several legs of a twisted pair cabling by using patch fields and outlets. It is not possible, however, to integrate active components such as network switches, hubs or repeaters.

Trans. 1: Connect this interface to a *CPU* port of a CATCenter system. Use a category 5 (or better) twisted pair cabling for this purpose.

Trans. 2: Connect this interface to a *CPU* port of a CATCenter system. Use a category 5 (or better) twisted pair cabling for this purpose.

DDC: This rotary switch enables selecting the desired DDC information. The chapter *Selecting DDC information* on page 7 provides further information regarding this topic.

Power Loop: Connect a Power Loop cable to this interface if you want to supply another target module with the power of the *optional* AC adapter.

Therefore, this target module has to be supplied with power of the *optional* AC adapter or of a Power Loop cable.

The chapter *Power supply via Power Loop cables* on page 10 provides detailed information regarding this topic.

Power In: If necessary, connect the *optional* AC adapter or the Power Loop cable (that is connected to another target module) to this interface.

When applying the AC adapter or a Power Loop cable, the target module does not have to be supplied with power through the two USB interfaces.

For redundant power supply, the user is enabled to energise the target module through the *USB Pwr* and *USB CPU* interfaces.

Status displays

The *Trans. 1* and *Trans. 2* interfaces each provide a yellow and a green LED. The LEDs display the current status of both the target module and the interface.

The entries in the table below refer to the status of the blinking duration and the blinking interval of both LEDs.

> If a user of a CATCenter system accesses the target module, the user's mouse or keyboard inputs are signaled by the flickering yellow LED at the *Trans.* interface.
>
> Ensure that no inputs are made at the console while the status is read from the following table.

Status *Time in seconds*	**Yellow LED** 0 1 2 3	**Green LED** 0 1 2 3
The power supply of the target module is interrupted.	[Off]	[Off]
There is *no* connection to the CATCenter system.	[Off]	
A connection to the CATCenter system has been established. *No* user currently accesses the target module.	[Off]	
A user currently accesses the target module. The computer is turned off, the DVI connection is interrupted *or* the graphics card is on standby.		
A user currently accesses the target module. The power supply of the target module is disturbed.		
The *USB CPU* interface is not connected to the computer *or* the device driver is being activated.		

Status *Time in seconds*	**Yellow LED** 	**Green LED** 
A connection to the CATCenter system has been established. A user currently accesses the target module.		
The DDC rotary switch is moved to *Learn*. No DDC information has been read in (yet).		
A monitor's DDC information has been successfully read in.		[Off]

Selecting DDC information

Since the monitor is connected to the user module and not directly to the computer's graphic output, the computer cannot access the monitor's DDC information.

For this reason, preset DDC information that are provided to the computer are stored in the *CATpro2-DVI-UC* target module. It is additionally possible to read out the monitor's DDC information and store it in the target module.

Preset DDC information

In the default setting of the *CATpro2-DVI-UC* target module the DDC rotary switch is moved to the *Def.* position.

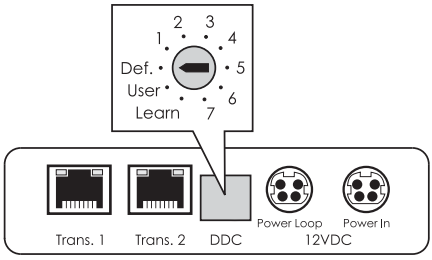


Figure 3: Detailed view of the DDC rotary switch

The following table lists different switch settings and the respective DDC information:

Switch setting	DDC information
Def.	Default (basically all resolutions possible)
1	1280 x 1024 pixels, 60 Hz (VESA-DMT)
2	1024 x 768 pixels, 60 Hz (VESA-DMT)
3	1600 x 1200 pixels, 60 Hz (VESA-DMT)
4	1920 x 1200 pixels, 60 Hz (VESA-CVT-RB)
5	1360 x 768 pixels, 60 Hz (VESA-CVT)
6	1680 x 1050 pixels, 60 Hz (VESA-CVT)
7	1440 x 900 pixels, 60 Hz (VESA-CVT)
User	use a monitor's read-out DDC information
Learn	read out a monitor's DDC information

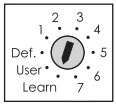
Reading out a monitor's DDC information

Besides selecting preset DDC information, you can read out a monitor's DDC information to provide it to the computer.

Tip: This technology allows providing the DDC information of that monitor in the target module that is connected to the user module.

Therefore, proceed as follows:

1. Unplug the DVI-D video cable from the *DVI-D CPU* interface.
2. Move the DDC rotary switch to the *Learn* position.

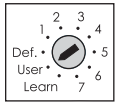
   

   The LEDs of both *Trans.* interfaces signal that the *Learn* mode is now activated (see *Status displays* on page 5).
3. Connect the monitor whose DDC-Information are to be stored in the *CATpro2-DVI-UC* target module to the *DVI-D CPU* interface.

   The DDC information of a monitor that is connected to the user module of the CATCenter system can be stored by using an analog VGA interface. For this purpose, the DDC information has to be preferably read in through this analog interface.

   To connect the monitor's VGA cable to the target module, a *DVI-I-HD15F* video adapter (item no.: A640 0027) can be applied, for example.

   The LEDs of both *Trans.* interfaces signal that the DDC information has been successfully read in (see *Status displays* on page 5).
4. Move the DDC rotary switch to the *User* position.

   The read-in DDC information is provided to the connected computer.
5. Remove the monitor cable from the *DVI-D CPU* interface.
6. Insert the DVI-D video cable that is connected to the computer into the *DVI-D CPU* interface.

Supported graphic resolutions

The *CATpro2-DVI-UC* target module basically supports every resolution that can be transmitted through a single link interface according to the DVI specification 1.0. This particularly applies to the pixel rate that may be between 25 and 165 MHz.

Therefore, resolutions between 640 x 480 pixels at 60 Hz and 1600 x 1200 pixels at 60 Hz are possible for the common VESA DMT and VESA SMT timing standards. According to VESA CVT-RB, 1920 x 1200 pixels at 60 Hz can be transmitted.

Any refresh rates and resolutions can be applied within the parameters mentioned above. It mostly depends on the graphics card, the connected monitor, the installed device driver, and on the operating system which display modes are actually available on the computer connected to the target module.

The image data transmitted from the computer to the target module are transferred to the monitor of the remote user module with unchanged timing. Frequencies and image position of the signal at the user module therefore comply with those at the graphics card output..

Note: While creating the video signal, many graphics cards differentiate between digital and analog output. Such graphics cards create digital image signals for the *CATpro2-DVI-UC* target module.

Independently from the operating system, some graphic cards therefore scale the image to the resolution selected at the DDC rotary switch on the target module. If necessary, use the DDC rotary switch to select the desired (native) resolution (see page 9).

Some graphics cards furthermore create digital image signals with non-standardised timings. Such timings differ from the monitor's standard to reduce the frequencies of digital signals. Due to the non-standardised timing, monitors that are connected to the user module in an analog way, might not be able to display both image size and image position correctly.

Power supply via Power Loop cables

If the *CATpro2-DVI-UC* target module is supplied with power from the *optional* AC adapter through the *Power In* interface, up to three further target modules can be supplied with power using Power Loop cables.

1. Connect the AC adapter ① to one of the target modules.
2. Insert a Power Loop cable ② into the *Power Loop* interface of this target module. Connect the other end to the *Power In* interface of the next target module.
3. If necessary, repeat step 2 for the third and the fourth target module.

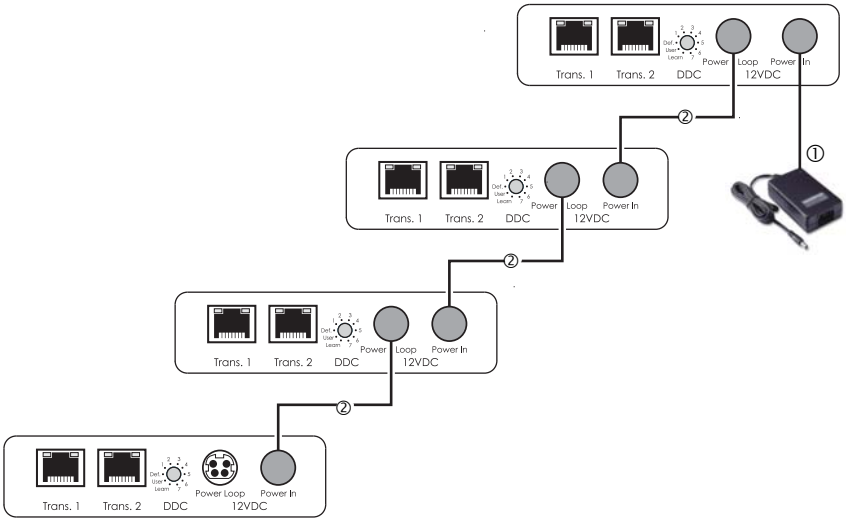


Figure 4: Four devices supplied with power by one AC adapter via Power Loop cables

Technical data

CATpro2-DVI-UC

Interfaces to computer:	Keyboard and mouse:	USB
	Video:	digital (DVI-D, single link)
Supported video data	Resolution @ 60 Hz:	max. 1920 x 1200 pixels
	Resolution @ 85 Hz:	max. 1280 x 1024 pixels
	Colour depth:	24 bits
	Pixel rate:	25 MHz to 165 MHz
	Vertical frequency:	50 Hz to 180 Hz
	Horizontal frequency:	30 kHz to 130 kHz
	Norms:	DVI 1.0, E-DDC
Power supply	Mode:	standard
	Type:	through two USB interfaces
	Connection:	2 x USB-B (*High Power*)
	Current consumption:	max. 700mA over two USB interfaces (max. 500mA per 5V-USB)
	Mode:	optional
	Typ:	AC adapter (12V/2A)
	Connection:	Mini-DIN 4 socket
	Current consumption:	max. 350mA@12VDC
	No. of devices per AC adapter:	4 devices through *Power Loop* cables
Power input	Standby:	0,5W@2x5V-USB; 0,5W@12V
	Operation:	3,4W@2x5V-USB; 3,8W@12V
Casing	Material:	anodised aluminium
	Dimensions (W x H x D):	105 x 26 x 84 mm
	Weight:	approx. 210 g
Operation environment	Temperature:	+5 to +40 °C
	Air humidity:	< 80%, non-condensing

Customer service

Even after you have purchased our products you can count on G&D. Qualified support in all areas of service is just as much a matter of course for us as the comprehensive advice provided by our sales force. For G&D, this is the foundation of an efficient partnership.

You can reach us

- on Mondays to Thursdays from 8:00 am to 4:30 pm and
- on Fridays from 7:30 am to 3:00 pm

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