



## GMS-xx Customer Connection Test Procedure

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## 1. Needed tools

- Notebook/ PC
- crossed LAN cable
- Cardreader for CF cards (in some PC's /Notebook already integrated)
- RS-232 cable (If your PC has no serial port, use a USB to RS-232 converter -> check [Appendix A](#))
- GeoDAS software >version 2.20
- Terminal software e.g. Windows Hyper Terminal, [Ucon](#) etc.
- Hexagon key No. 5 (unscrew cover)

## 2. GMS-xx LED indication

<p>The LED's on the top indicates the status of the instrument</p>	 <p style="text-align: center;">Fig 1. LED's on the top</p>		
<p>In <b>normal</b> operation they are as following:</p> <p>For further explanation check also the <a href="#">GMS manual</a> chapter 3.3 downloadable from our website <a href="http://www.geosig.com">www.geosig.com</a></p>	<p><b>Color</b></p>	<p><b>Indication</b></p>	<p><b>States</b></p>
	<p><b>GREEN</b></p>	<p><b>AC</b> indicator</p>	<p>When ON, The GMS is powered by AC.</p>
	<p><b>GREEN</b></p>	<p><b>RUN</b> indicator</p>	<p><b>Blinking 20% ON, 80% OFF at 1 sec period:</b> Normal operation of the instrument, data acquisition is running</p>
	<p><b>YELLOW</b></p>	<p><b>EVENT</b> indicator</p>	<p><b>OFF:</b> Unit is not recording and no events are on the CF card</p> <p><b>Blinking:</b> Indicates the amount of memory used on the CF card (&lt;25%, &gt;25%, &gt;50%, &gt;75%)</p> <p><b>ON:</b> The unit is recording at the moment</p>
	<p><b>BLUE</b></p>	<p><b>LINK</b> indicator</p>	<p><b>OFF:</b> Link with the data server is established, no communication ongoing</p> <p><b>Blinking at 1 sec period:</b> Problem with the link to the data server</p> <p><b>ON:</b> Link with the data server is established, communication or data transfer ongoing</p>
	<p><b>RED</b></p>	<p><b>ERROR / STATE</b> indicator</p>	<p><b>OFF:</b> No problem or warning</p> <p><b>Blinking at 2 sec period:</b> Warning is present</p> <p><b>Blinking 1 sec period:</b> Error is present</p> <p><b>ON:</b> Data acquisition is not running, e.g. during start up</p>
	<p>Fig 2. LED indication table</p>		

### 3. CF (Compact Flash) Card checking

<p><b>3.1. Data storage</b></p>	
<p>Unscrew the cover of the GMS with a Hexagon screwdriver No. 5</p>	 <p style="text-align: center;">Fig 3. GMS</p>
<p>Switch off the GMS</p>	 <p style="text-align: center;">Fig 4. Top view</p> <p>Press the power button on the top 3 seconds (the RUN LED will Blinking 80% ON, 20% OFF at 2 sec period)</p>
<p>Wait until all LED's are off, except the one for AC (green), then remove the CF card by pressing the button besides the card</p>	 <p style="text-align: center;">Fig 5. Card Ejector</p>
<p>Put the CF card into a card reader on the PC</p>	

Create a new folder on the desktop of your PC

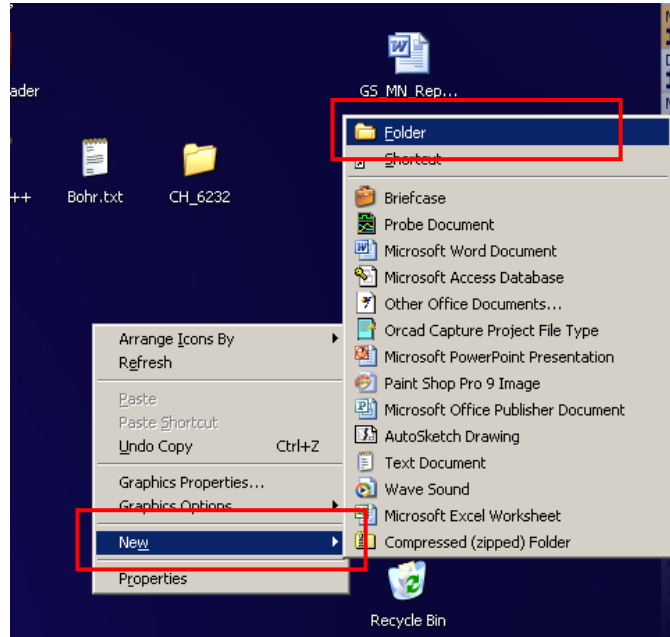


Fig 6. Create a new folder

Right-click on the desktop, choose “New” and “Folder”  
Name it with the serial number of the GMS

Open in your PC “My Computer”  
Double-click on the drive where the CF card is inserted

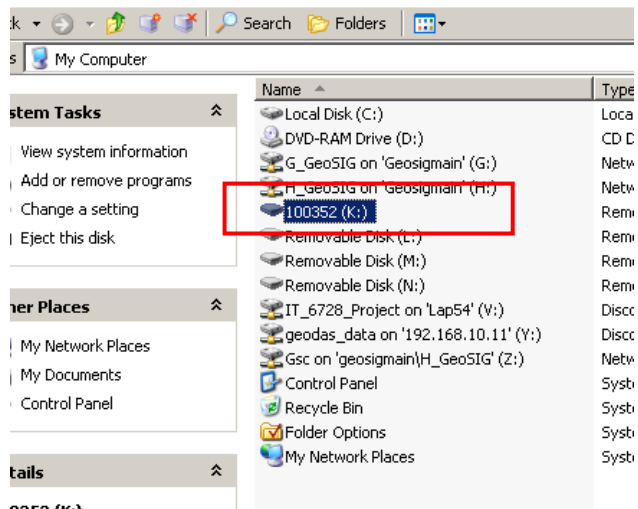


Fig 7. My Computer

Copy the content into the new folder

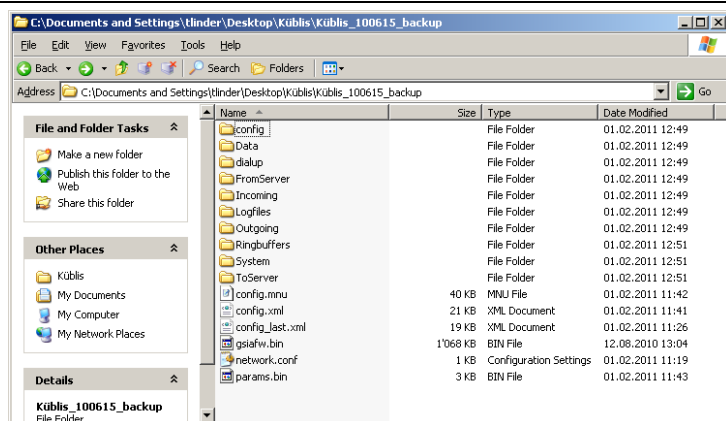


Fig 8. CF card content

Press "Ctrl" + "A", all files and folders will be selected

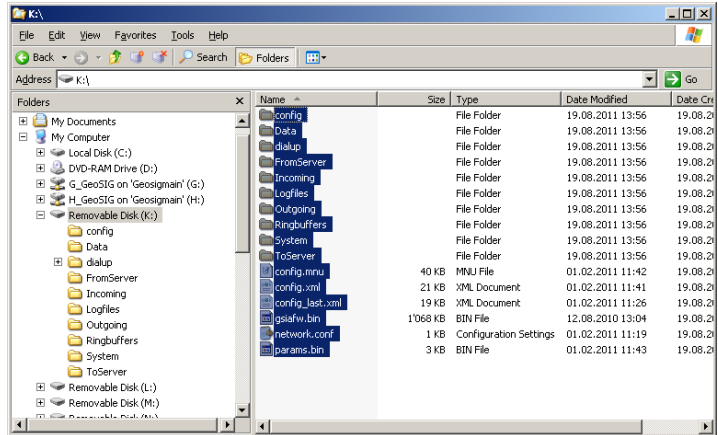


Fig 9. All files selected

Drag and drop with the mouse the files into the new folder

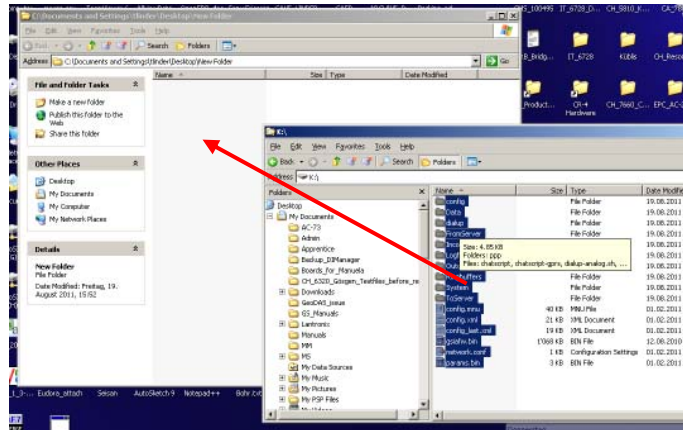


Fig 10. Both windows shown

Close the windows afterwards

### 3.2. CF card test

Open in your PC "My Computer"

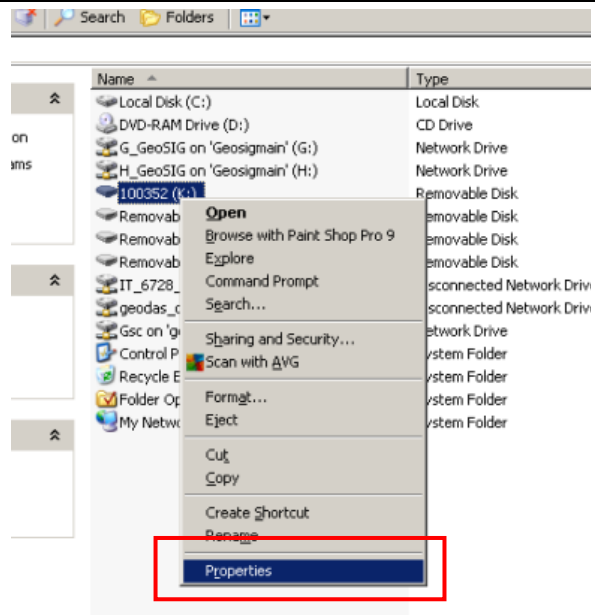


Fig 11. System overview

Right-click on the specific drive, where the CF card is inserted  
Choose "Properties"

Drive Properties Window

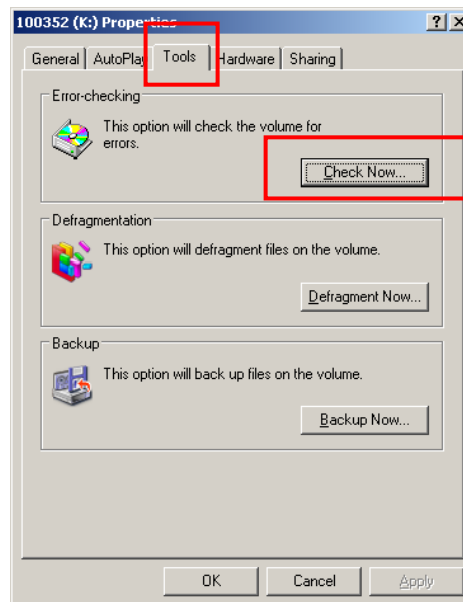
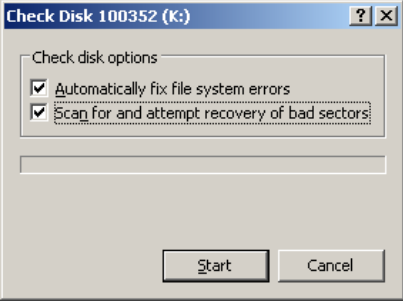



Fig 12. Properties – Tools Tab

Choose the "Tools" tab  
Press "Check Now"

	 <p style="text-align: center;">Fig 13. Check Disk options</p> <p>Enable both options and press “Start”              If everything is okay, a message appears:</p>  <p style="text-align: center;">Fig 14. Check Disk completed</p> <p>Press “OK”              Leave “Properties” Window by pressing “OK”</p>
<p><b>3.3. CF card has errors</b></p>	
<p>If the card has errors, replace it by a new one</p>	<p>If you use a new CF Card you have to format it first. See chapter 3.4.              Copy all the files from the stored data back to the card              see also <a href="#">chapter 3.1</a></p>
<p><b>3.4. CF card format</b></p>	
<p>Before you can use the new card you have format it</p>	<p>Insert the new card into the cardreader in your PC and open “My Computer”</p>



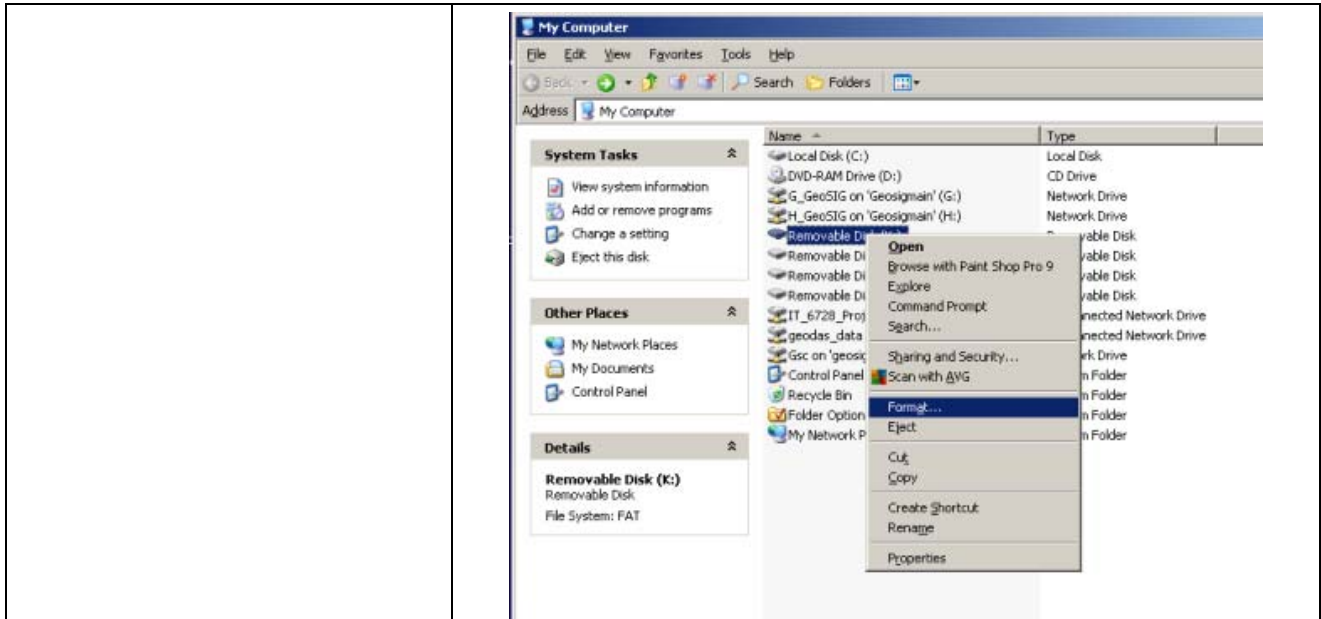


Fig 15. My Computer window

Choose "Format"

A new window appears

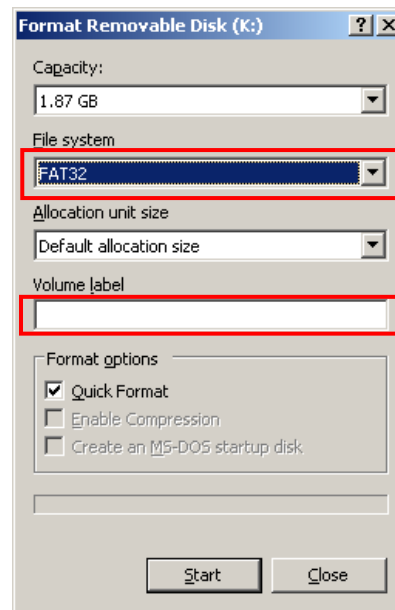


Fig 16. Format Disk window

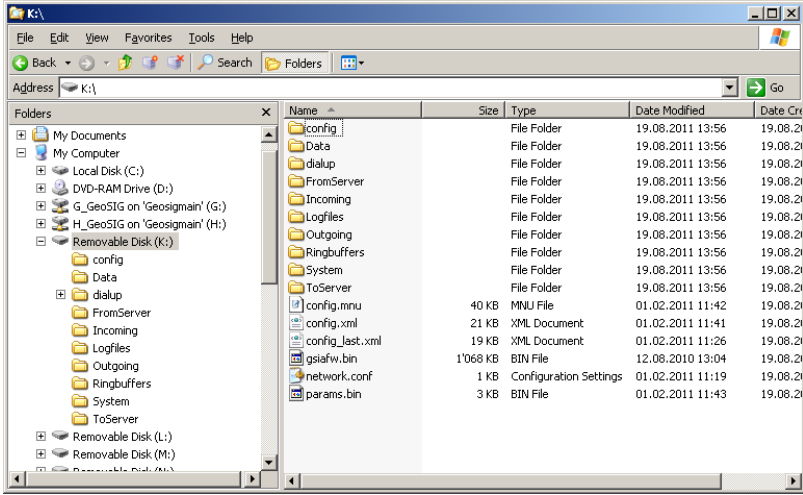
Choose FAT32

Write the serial number of the GMS into "Volume Label" (e.g. 100785)

Choose "Quick Format"

Press "Start" to start the format

Copy all the needed files of the saved data see [chapter 3.1](#)

<p><b>3.5. Speed up of the start process</b></p>	
<p>If the instrument has never or for a long time not connected to the server, there might be a lot of files stored on the CF card.</p>	<p>During the startup process, the GMS checks all the files on the CF card. This might take several minute, depending on the amount of files.</p>
<p>To speed up the start process, move or delete the files</p>	<p>Open the explorer</p>  <p style="text-align: center;">Fig 17. Explorer</p>
<p>Check the folder: Data Logfiles Ringbuffers</p>	<p>These folders might have several files in it.</p> <p>If you do not need the files anymore, delete them otherwise create a new folder on the desktop of your PC and drag and drop these folders into the new folder.</p> <p>If the files have been copied successfully to your PC, make sure afterwards that on the CF card these folders are empty.</p>

### 3.6. Eject the CF card

Choose again the specific drive where the card is inserted

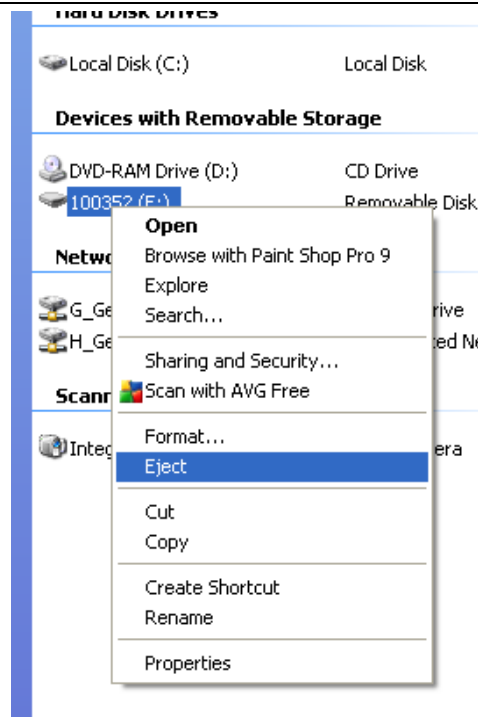


Fig 18. Eject function for CF Cards

**USE ALWAYS THE EJECT FUNCTION. NEVER REMOVE CF-CARDS WITHOUT PRESSING EJECT. THE CF CARD CAN GET DAMAGED AND DATA ARE LOST.**

Press "Eject" and wait at least 5 seconds before you remove the card. Usually the name of the drive changes after 1-2 seconds.

Especially with PCMCIA CF Card reader you may have to use the function "Safely Remove Hardware"



Mouse-over the symbol in the taskbar and wait for the menu. Click the specific drive where the CF card is inserted

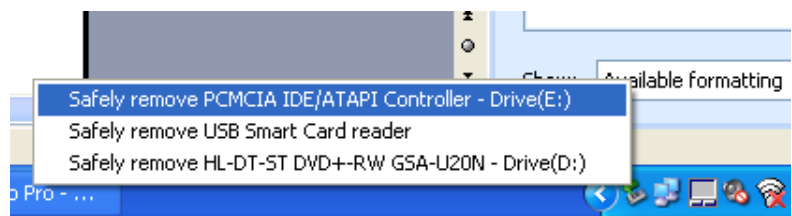


Fig 19. Safely Remove Hardware

Wait for the message that it is now safe to remove the card.

Put the card back into the GMS

Make sure to insert it in the right direction



Fig 20. Check direction of the card

#### 4. Starting the GMS

Connect a PC with the GMS

Connect a RS-232 cable with the connector on the top of the GMS



Fig 21. Serial port on the top

Open a Terminal software

E.g. Hyper Terminal of windows, [Ucon](#) or others

Make sure to choose the right COM port

If you are not sure about the right COM port, check [Appendix A](#)

Settings should be as following:

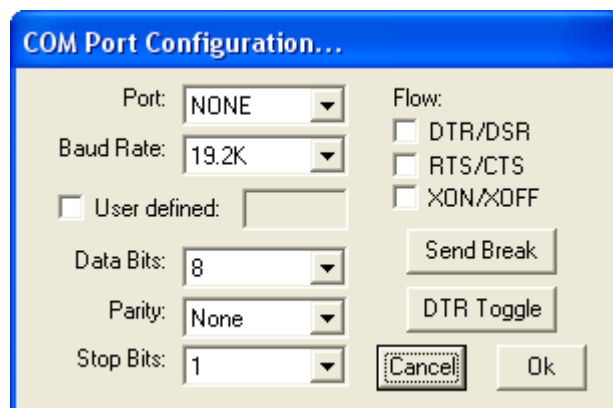


Fig 22. COM Port settings (example of Ucon)

Start the GMS	Press the power button on the top Press immediately Ctrl + Z to enter the bootloader menu

In the Terminal window appears the first message.

```
GSR-IA18 and GMS-XX Boot Loader, version 1.19 (16.07.2010)
Press Ctrl+Z to enter the test mode...
```

### Press immediately Ctrl + Z to enter the bootloader menu

Press 'N' to enter the menu *Network setting*

```
--- Hardware Setup and Monitor ---
S - WIFI setup
H - WIFI monitor without network connections
I - WIFI monitor with network connections (may take long to start)
K - Instrument hardware parameters
N - Network settings
```

```
==== Network Settings ====
Static IP address (1=YES, 0=AUTO)? (0 = 0x0):
```

Check if the IP settings are set correctly.

In case of a static IP it must be 1 (1 = 0x1), in case of dynamic (DHCP) it has to be 0 (0 = 0x0)

If wrong change by pressing either 1 or 0

In case a static IP is selected, an additional message will appear asking for the *Instrument IP address*, *Instrument network mask* and *Instrument gateway IP*. In case you don't know these parameters please ask your network administrator.

```
Static IP address (1=YES, 0=AUTO)? (0 = 0x0): 1
Instrument IP address (192.168.10.211):
Instrument network mask (255.255.255.0):
Instrument gateway IP (192.168.10.254):
```

In case telnet is used to enter to the operating system from remote the telnet can be enabled. This feature is not needed for the normal operation of the instrument and therefore it should be kept disabled by default. To keep disabled press '1'

```
Disable telnet (1=Yes, 0=Enable)? (0 = 0x0): 1
```

It's highly recommended to put a *recovery server IP* address and *recovery server port*. The instrument will contact this server in case the connection to the main data server (configured in the configuration of the instrument) is not possible anymore. This can happen for example in case accidentally a configuration file with wrong server settings will be uploaded to an instrument.

```
Recovery server IP address (192.168.10.107):
Recovery server port (3456 = 0xD80):
```

Start instrument by pressing '5'

```
Bootloader Menu

--- Flash Images and Boot Options ---
B - Load binary image to RAM via AUX COM port at 57600 baud
```

```

G - Run loaded image
L - List flash images
1 - Save the loaded RAM image to FLASH
2 - Load an image from FLASH to the RAM
3 - Copy raw RAM memory block to FLASH (0x20000 bytes)
4 - Boot from the selected image
5 - Boot from the default image
X - Reboot the instrument
Y - Power off

```

Wait until the GMS has started completely (RUN LED is blinking > [see chapter 2](#))

To increase the startup time check [chapter 3.5](#)

## 5. Checking the IP addresses

If you connect the GMS directly to the PC, use a crossed cable or an unmanaged, simple switcher.

### 5.1. Checking and configuring the IP of my PC

To be able to ping the GMS, you have to be in the same network IP range.

- Go to "Start"
- Settings
- Control Panel
- Network connections
- Local Area Connection

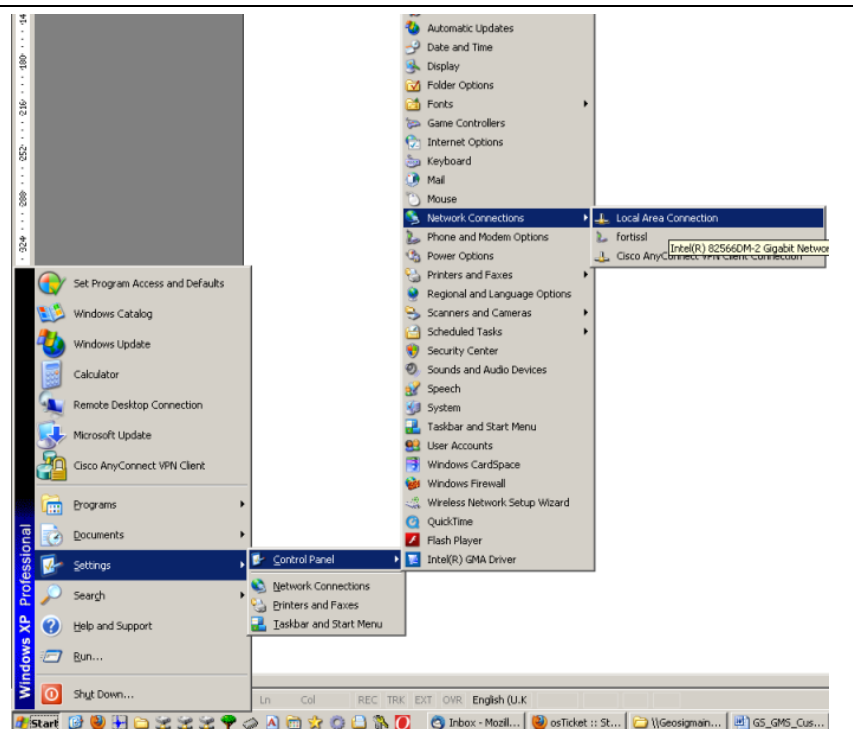


Fig 23. Choose the network connection

Choose Properties

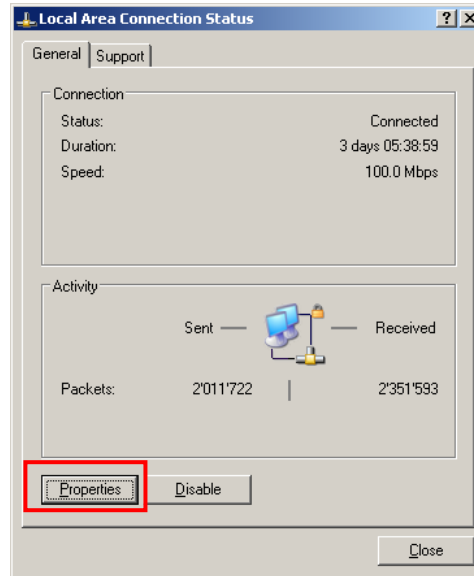


Fig 24. Local Area Connection Status

Choose the Properties of "Internet protocol (TCP/IP)

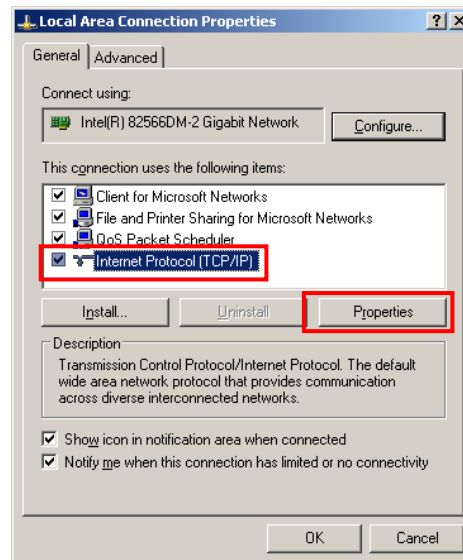


Fig 25. Local Area Connection properties

Set the correct IP addresses:

Press "Okay" to leave the window

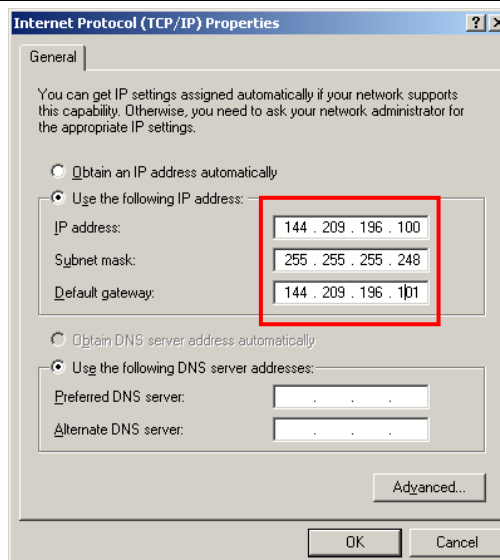


Fig 26. Internet Protocol Properties

## 5.2. Checking the GMS address

In case of using dynamic IP addresses (DHCP), you might want to know the IP address of your GMS.

Connect the serial port (CONSOLE) on the GMS top Press “Enter” with your PC.

Open a terminal software.

Press “Enter”

The Main Menu appears:

```
GMS-xx version 20.00.83
Main Menu:
C - Configuration
M - Messages ->
S - Shell Command
X - Display errors (0) and warnings (0)
W - Clear errors and warnings
F - View/reset RTC trim values
G - View RTC status
H - Set RTC time
U - User request
R - Restart
Q - Quit
```

Press “S”

```
Linux Command :
```

Type ifconfig and press “Enter”

```
eth0      Link encap:Ethernet  HWaddr 00:50:C2:77:41:AD
  →      inet addr:192.168.10.113  Bcast:192.168.10.255  Mask:255.255.255.0
         UP BROADCAST NOTRAILERS RUNNING MTU:1500 Metric:1
         RX packets:1149 errors:0 dropped:0 overruns:0 frame:0
         TX packets:26 errors:0 dropped:0 overruns:0 carrier:0
         collisions:0 txqueuelen:100
         Interrupt:165 Base address:0x300

lo        Link encap:Local Loopback
         inet addr:127.0.0.1  Mask:255.0.0.0
         UP LOOPBACK RUNNING MTU:16436 Metric:1
         RX packets:0 errors:0 dropped:0 overruns:0 frame:0
         TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
         collisions:0 txqueuelen:0
```

## 5.3. Ping the GMS IP address

Open the command prompt:

Go to “Start”



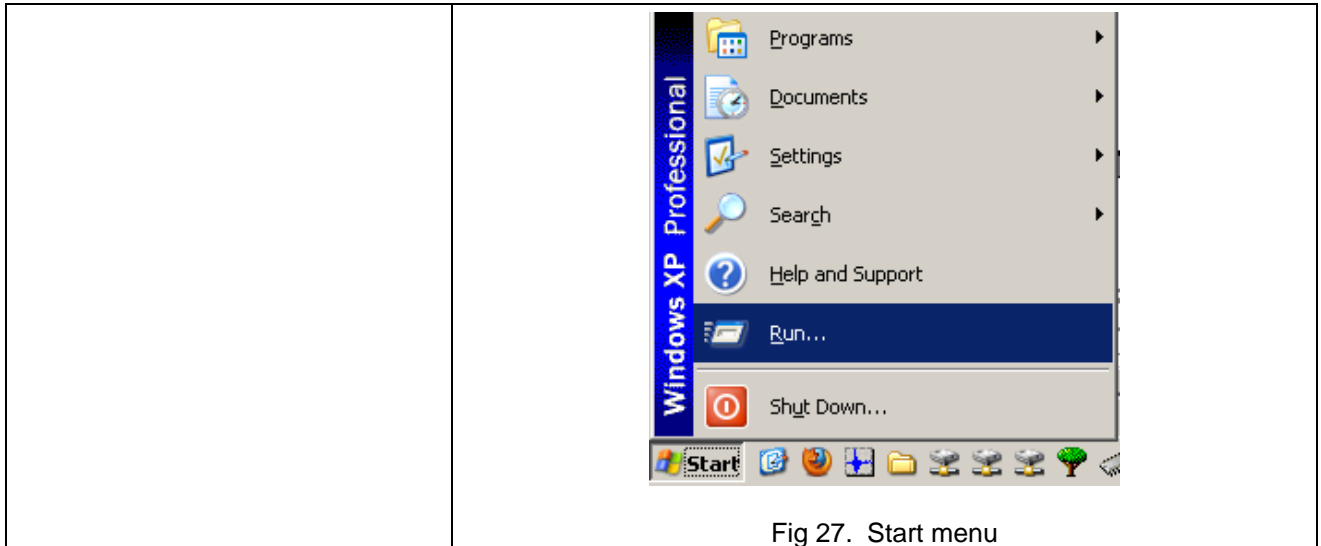


Fig 27. Start menu

Click "Run"

A new window appears

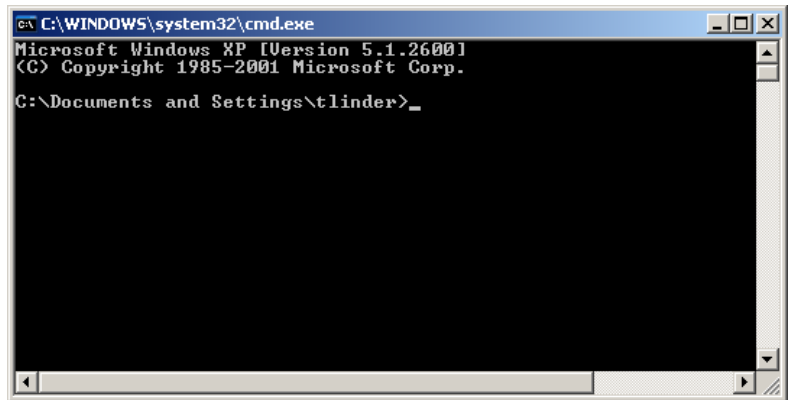


Fig 28. Command prompt window

Ping the IP address of the GMS

Type "ping and the address from [chapter 5.1.](#)"

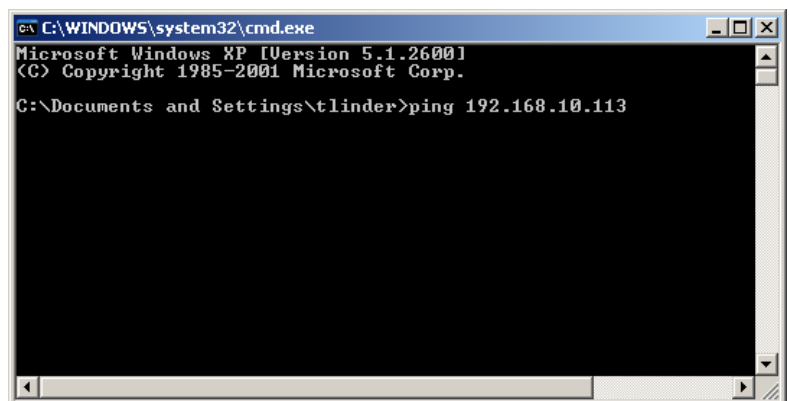


Fig 29. Command prompt window

If the GMS can be reached the following messages appears

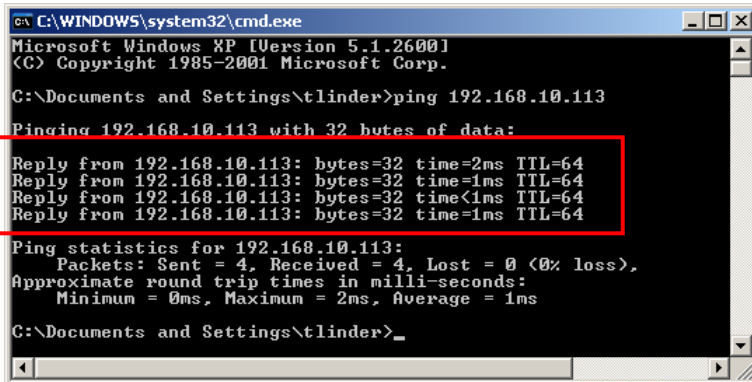


Fig 30. successful connection

If this message is shown, you have to check your Ethernet cable or if your PC is in the same subnet.

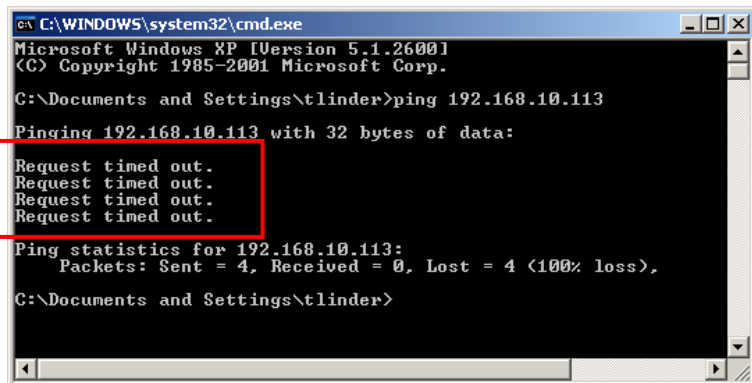


Fig 31. no connection to the GMS

### 5.4. Checking the IP address of my PC

Open the command prompt

Type in "ipconfig" and press "Enter"

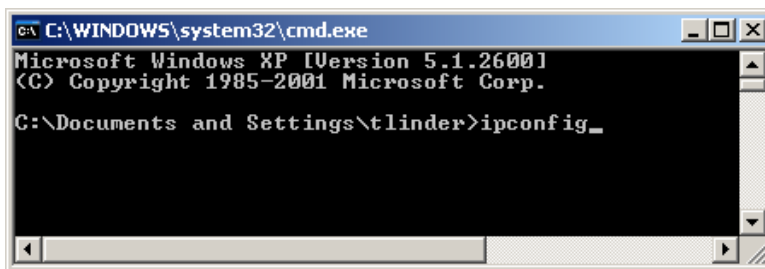


Fig 32. Command prompt window

The own IP address is listed

Check if the IP address of the GMS and the PC are in the same subnet.

The first three blocks (red) should be the same, only the last two digits (green) MUST be different.

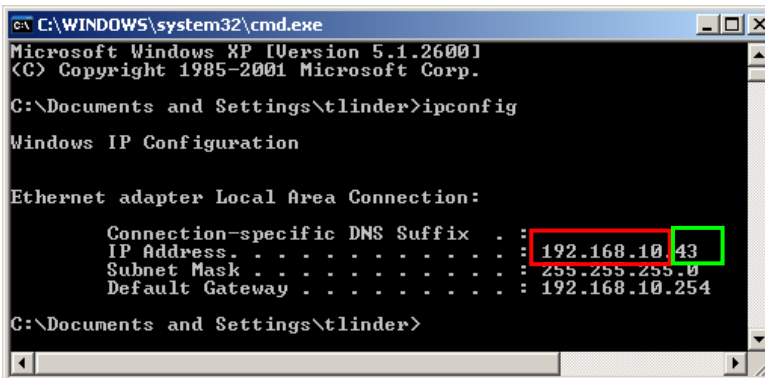
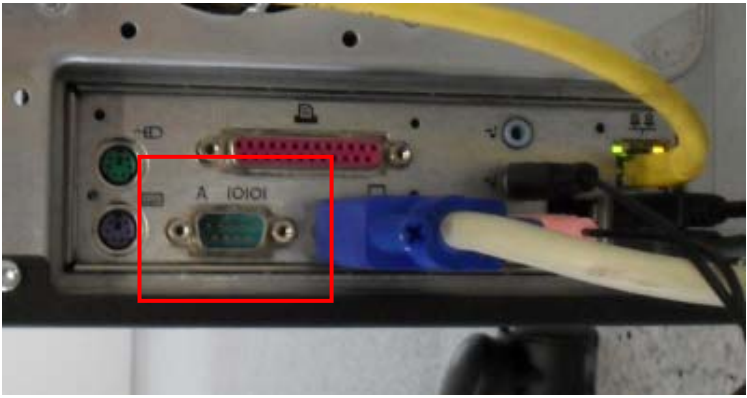

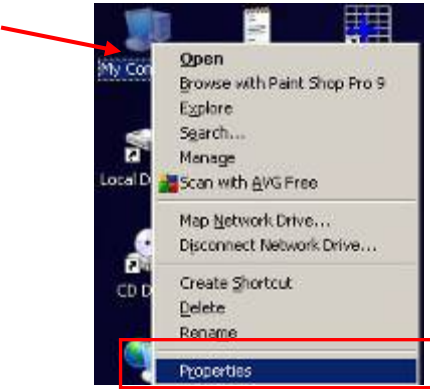


Fig 33. Command prompt window

## Appendix A.

### 1. How to check the COM Port Number

<b>1.1. If I have a serial port on my computer</b>	
Usually it is COM port 1	 <p data-bbox="890 1025 1216 1055">Fig 34. Serial Port on a PC</p>
<b>1.2. If I have to use a USB to RS-232 converter</b>	
Example of a converter	 <p data-bbox="853 1559 1249 1588">Fig 35. USB to RS-232 converter</p>
Right click on "My Computer" Choose "Properties"	 <p data-bbox="834 2011 1270 2040">Fig 36. Properties of "My Computer"</p>

Choose the tab "Hardware"

Choose "Device Manager"

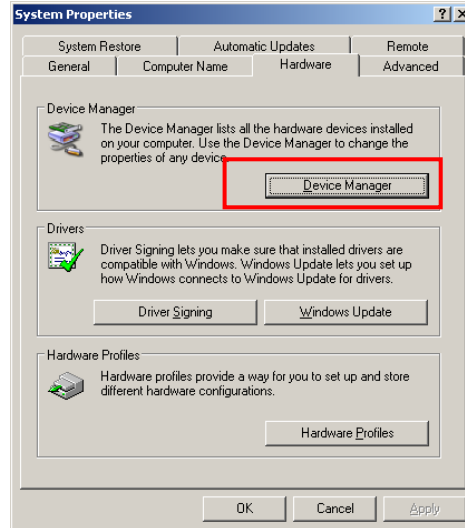


Fig 37. Hardware Properties Tab

Check which COM Port number is written for your USB COM Port converter (in this example COM6)

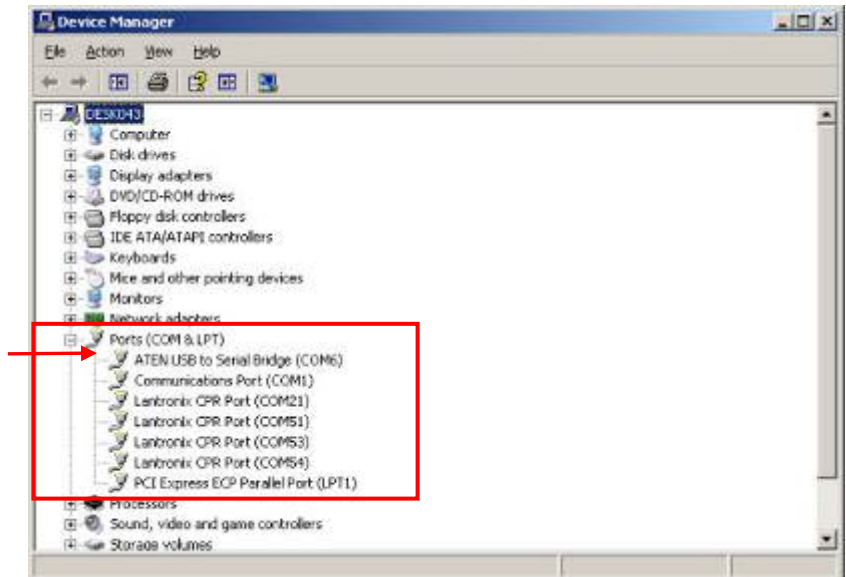


Fig 38. Device Manager Window

If you are not sure which one it is, you can leave the window open, disconnect and reconnect the device to check which one disappears and appears again.

If the same converter is connected to another USB port, then the COM-Port might be different.