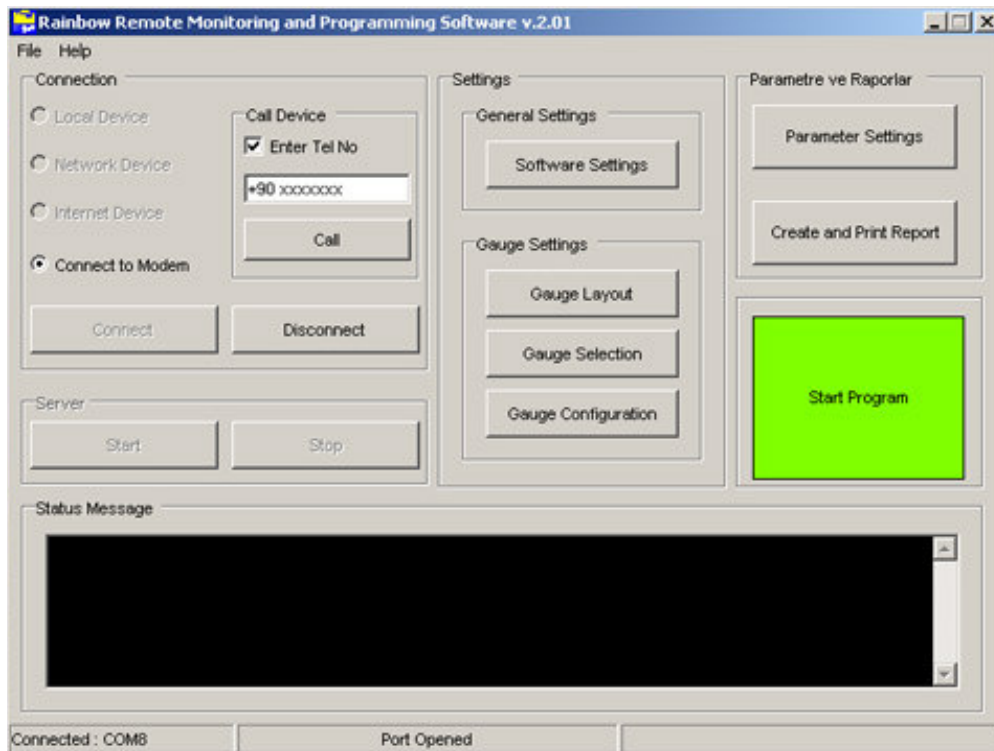




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DKG-207/217/307/317/507/517 MODEM CONNECTION APPLICATION MANUAL



The RAINBOW Remote Monitoring and Programming PC software may be downloaded from www.datakom.com.tr internet site with password login. If you do not have a password please contact DATAKOM.

The software allows the visualization and recording of all measured parameters. The recorded parameters may then be analyzed graphically and printed. The software also allows the programming of the unit and the storage of the program parameters to PC or the downloading of stored parameters from PC to the unit.

BASIC FEATURES

Gauges for 3 phase mains voltage inputs
Gauges for 3 phase genset voltage inputs
Gauges for 3 phase genset CT inputs
Gauge for engine oil pressure
Gauge for engine coolant temperature
Gauge for genset active power measurement
Gauge for genset power factor measurement
Displays alarms and warnings in window

Displays recorded events in window
Displays the battery backed-up real time clock
Adjusts and displays all programmable parameters
Saves statistical counters as both word and excel
Local Engine control via PC
Connects via RS-232 serial port
Local, LAN, IP and modem connection modes

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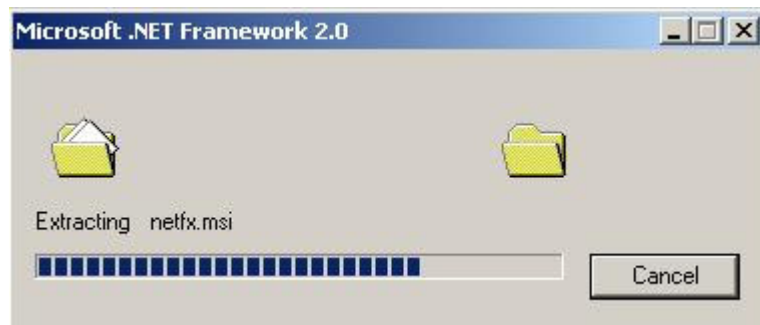
1. SOFTWARE INSTALLATION AND MODEM CONNECTION

1.1 Microsoft Framework Installation

Microsoft **dotnetfx2.exe** should be installed to the PC in order to provide correct framework platform. **dotnetfx2.exe** (22.4MB) v2.0 can be found at Microsoft website.

<http://cowscorpion.com/dl/Microsoft.NETFramework.html> is the sample link which is available to find and download dotnetfx2.exe (22.4MB) v2.0.

After download the dotnetfx2.exe (22.4MB) v2.0 the program could be easily installed by following windows instructions.



1.2 Install & Uninstall the RAINBOW PC Software

As mentioned before, the PC software may be downloaded from www.datakom.com.tr internet site with password login. If you do not have a password please contact DATAKOM.

After downloading the software, unzip the files to a folder and double click the **setup.exe** file.



Warning: If the RAINBOW software is already installed, do not try to install RAINBOW software without uninstalling the old software !

Click **Start>Settings>Control Panel>Add/Remove Programs** to uninstall the old software. J10Y01A.xml file should be deleted for complete uninstallation. It is located in **C:\Program Files\RAINBOW\RAINBOW** folder. The **J10Y01A.xml** file needs to be deleted manually (SHIFT+DELETE for permanent delete)

1.3 Modem selection

Both traditional and GSM modems are allowed.

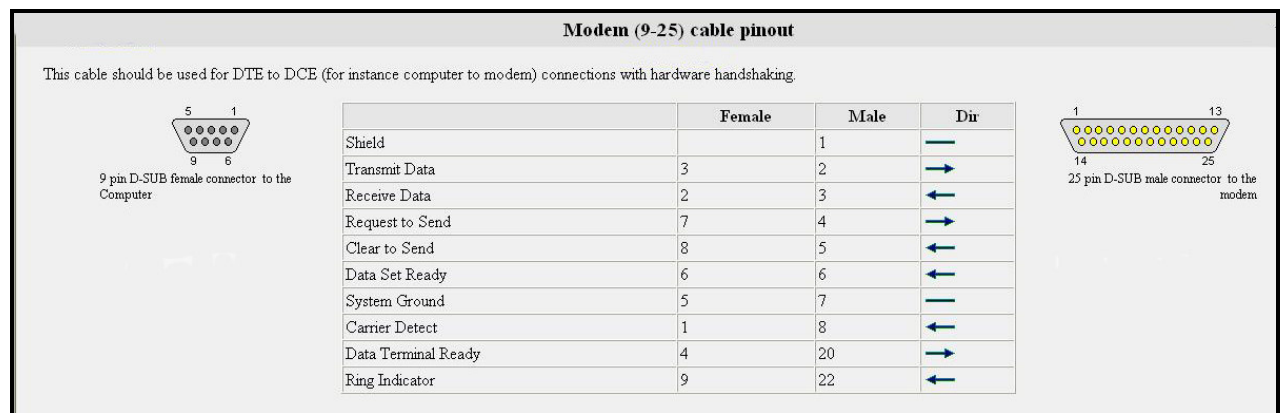
Both modems at the DKG-207/217/307/317/507/517 and PC end should be identical.

If cable modems are to be used, they should be of **US Robotics 56K** external type. Other brands are not tested and not guaranteed to operate.

The GSM modems can be **SIEMENS** or **WAVECOM** models.

1.4 Connecting the modem to PC

The connection cable between the modem and PC is standard and should normally be given with the modem. The connections below is only for information.

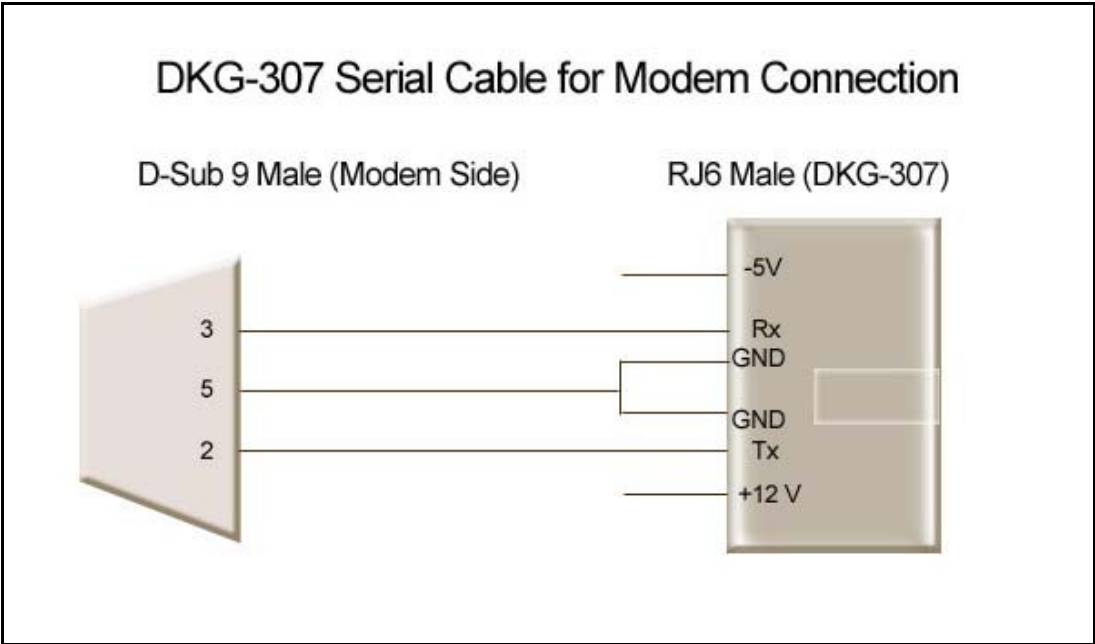


1.5 Connecting the DKG-207/217/307/317/507/517 to modem

DKG-207/217/307/317/507/517 is connected to the modem through its standard RS-232 serial port which is a 6 pin female RJ connector. This connector provides serial data input and output for remote monitoring and programming.

The sample cable diagram for the connection between Modem and DKG-207/217/307/317/507/517 is below.

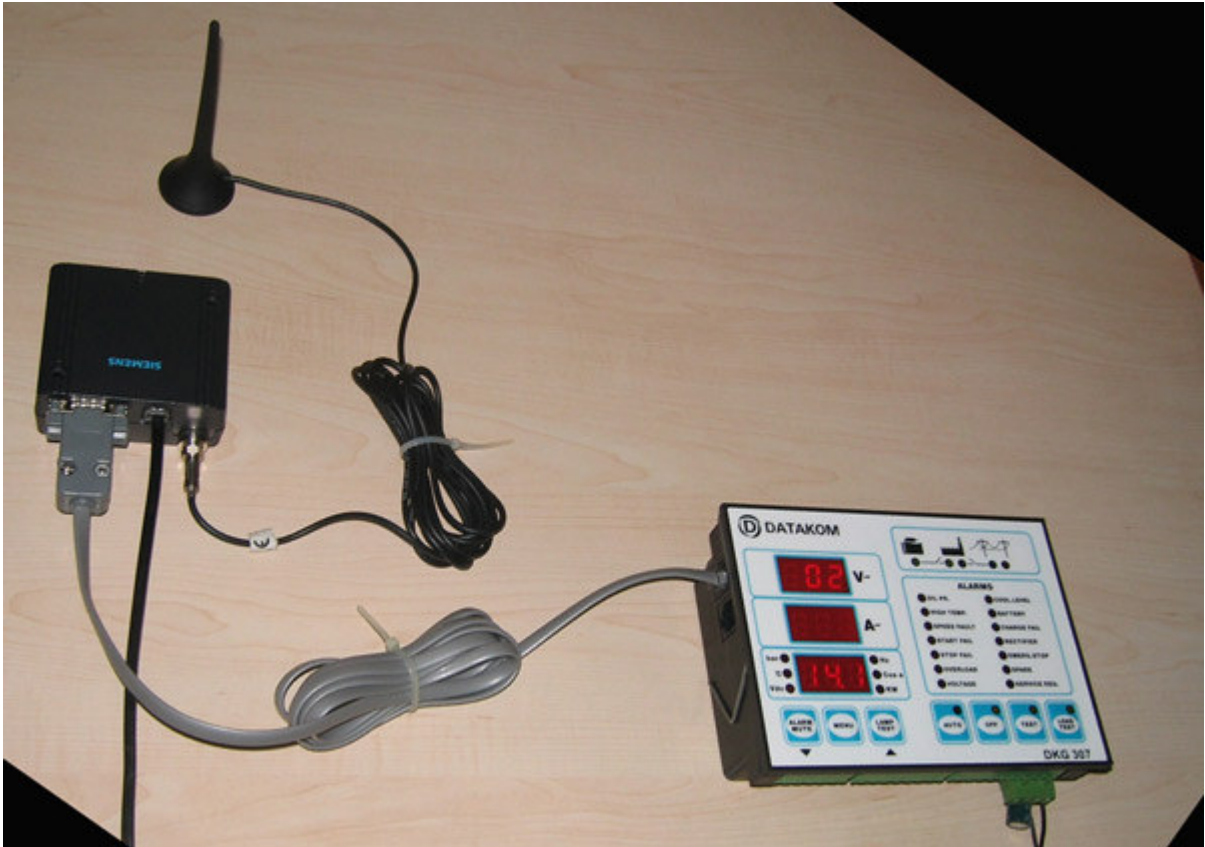
The connections are the same for both external 56K Modem and GSM modem.



External 56K Modem – DKG-207/217/307/317/507/517 Sample Connection



GSM Modem – DKG-207/217/307/317/507/517 Sample Connection



2. MODEM CONFIGURATION AND OPERATION

2.1 Configuring the DKG-207/217/307/317/507/517 for modem operation

If the DKG-207/217/307/317/507/517 unit is to be connected to a modem, the program parameter **P_043** should be set to **1** using the programming menu, otherwise faulty operation may occur.

2.2 56K External Modem Configuration and Operation

Two 56K external modems are needed.

One will be connected to the PC and the other to the remote DKG-207/217/307/317/507/517.

Local-PC side modem does not need to be configured. It can be used with default configuration.

The distant modem should be of **Auto Answer** type and must connect to DKG-207/217/307/317/507/517 at **2400 bauds**. After configuration it will automatically off-hook when ring is detected. Before connecting the distant modem to DKG-207/217/307/317/507/517, it should be configured manually by using the **HyperTerminal** program.

For external modem configuration please follow below steps:

The modem to be configured should be connected to the PC with the standard modem cable described in section 1.4.

The **HyperTerminal** may be opened by clicking to the;
Start>Programs>Accessories>Communications>HyperTerminal.

When it opens, the connection description dialog box will appear, a name should be given to the connection e.g. DKG.

After giving the name, the **com** port should be selected (most probably COM1) then from COM1 properties window, following parameters should be selected: 2400 baud, no parity, 1 bit stop, no flow control.

After above steps are done, communication between modem and PC should be set, empty Hyper Terminal screen will be opened and **connected xxx Baud** message will be displayed on the bottom status bar.

If the commands are not echoed on the screen please do not worry, this is normal, right commands should be entered before echoing.

Write **AT** and press **enter** key for testing modem on the empty Hyper Terminal screen, **OK** reply message (from the modem) will appear on the screen.

If there is nothing on the terminal screen, **AT&E1** must be written and the **enter** key should be pressed (it will enable the **local echo** mode to see the written commands) also **AT&Q0** must be written and the enter key should be pressed in order to see the local modem results (**response messages**).

If still there is no message on the screen, this means that the modem serial connection speed is not 2400 bauds. So write below commands for setting the baud rate and auto answer either you see or not the commands, last two commands will save the new configuration to the modem memory.

ATS0=2	← ENTER	(Set Auto Answer with 2 rings)
AT&D0	← ENTER	(DTR Enabled)
AT&N3	← ENTER	(Set 2400 Baud rate)
AT&R1	← ENTER	(RTS control off)
AT&W0	← ENTER	(Write configuration to profile1 memory)
AT&Y0	← ENTER	(Load profile1 configuration as running configuration)

After restarting the modem, the same connection should be open using the hyperterminal and now the modem can be tested with the AT commands.

If the configuration is successful, data calls can be received and the data communication signal will be heard after two rings.

Before mounting the modem to the remote side please be sure that the above configuration is saved to the modem memory and when it is restarted it does not lose the configuration.

2.3 GSM Modem Configuration and Operation

Two GSM external modems are needed. Please check section 1.3 for approved types.

One modem will be connected to the PC and the other to the remote DKG-207/217/307/317/507/517.

Local-PC side GSM modem needs below configuration:

The **HyperTerminal** should be opened by clicking to the;
Start>Programs>Accessories>Communications>HyperTerminal.

When it opens, the connection description dialog box will appear, a name should be given to the connection, e.g. DKG-Local GSM Modem.

After giving the name, the **com** port should be selected (most probably COM1) then from COM1 properties window, following parameters should be selected: 9600 baud, no parity, 1 bit stop, no flow control.

After above steps are done, communication between modem and PC should be set, empty Hyper Terminal screen will be opened and **connected xxx Baud** message will be displayed on the bottom status bar.

If the commands are not echoed on the screen please do not worry, this is normal, right commands should be entered before echoing.

Write **AT** and press **enter** key for testing modem on the empty Hyper Terminal screen, **OK** reply message (from the modem) will appear on the screen.

If there is nothing on the terminal screen, **AT&E1** must be written and the **enter** key should be pressed (it will enable the **local echo** mode to see the written commands) also **AT&Q0** must be written and the enter key should be pressed in order to see the local modem results (**response messages**).

If still there is no message on the screen, this means that the modem serial connection speed is not 9600 bauds. So write below commands for setting the baud rate and data call mode either you see or not the commands. The last command will save the configuration to memory.

AT+CBST=0	← ENTER	(Set Auto Baud rate: 9600 bauds)
AT+CSNS=4	← ENTER	(Force data call)
AT&W	← ENTER	(Write configuration to memory as running configuration)

After restarting the modem, the same connection should be open using the hyperterminal and now the modem can be tested with the AT commands. If the configuration is successful you can make a call, example: ATDT(phone number) ← Enter (e.g. ATDT00905552780272←)

The distant GSM modem needs below configuration:

The distant GSM modem should be of **Auto Answer** type and must connect to DKG-207/217/307/317/507/517 at **2400 bauds**. After configuration it will automatically off-hook when ring is detected.

Before connecting the distant GSM modem to the DKG-207/217/307/317/507/517 it should be configured manually by using the HyperTerminal program.

The **HyperTerminal** should be opened by clicking to the;
Start>Programs>Accessories>Communications>HyperTerminal.

When it opens, the connection description dialog box will appear, a name should be given to the connection e.g. DKG-207/217/307/317/507/517 -Near GSM Modem.

After giving the name, the **com** port should be selected (most probably COM1) then from COM1 properties window, following parameters should be selected: 2400 baud, no parity, 1 bit stop, no flow control.

After above steps are done, communication between modem and PC should be set, empty Hyper Terminal screen will be opened and **connected xxx Baud** message will be displayed on the bottom status bar.

If the commands are not echoed on the screen please do not worry, this is normal, right commands should be entered before echoing.

Write **AT** and press **enter** key for testing modem on the empty Hyper Terminal screen, **OK** reply message (from the modem) will appear on the screen.

If there is nothing on the terminal screen, **AT&E1** must be written and the **enter** key should be pressed (it will enable the **local echo** mode to see the written commands) also **AT&Q0** must be written and the enter key should be pressed in order to see the local modem results (**response messages**).

If still there is no message on the screen, this means that the modem serial connection speed is not 2400 bauds. So write below commands for setting the baud rate and auto answer either you see or not the commands, last two commands will save the new configuration to the modem memory.

ATS0=2	← ENTER	(Set auto answer with 2 rings)
AT+CBST=4	← ENTER	(Set baud rate to 2400)
AT+IPR=2400	← ENTER	(Force modem to connect at 2400 baud rate)
AT+FCLASS=0	← ENTER	(Set modem for data mode)
AT+CSNS=4	← ENTER	(Force data call)
AT&W	← ENTER	(Write configuration to memory as running configuration)

After restarting the modem, the same connection should be open using the hyperterminal and now the modem can be tested with the AT commands. If the configuration is successful, the distant GSM modem should be able to receive data calls, the connection should be established after two rings.