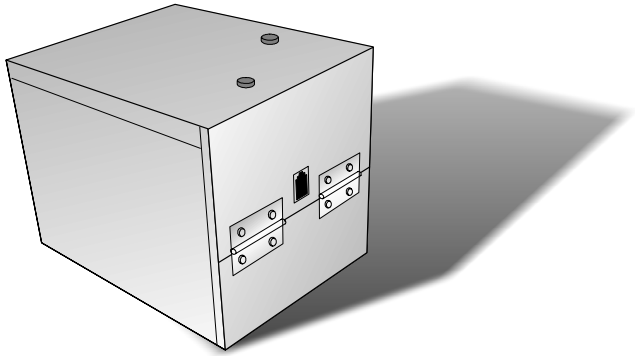
CMCS

GPRS Modem Using Newton (NTN01)



Application Example of Newton

Date: 5/29/02
Doc. No.: NTNAMSML003C

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Safety Precautions

When using this product, the safety precautions below must be taken against possible legal issues and damages.

SAFETY IN AIRCRAFT

The interference would be caused by this product to an aircraft's navigation system and its network. In most countries, using this product on board an airplane is against the law.

SAFETY FOR ENVIRONMENTS

Do not use this product in gas stations. Also the use of this product is prohibited in fuel storehouse, chemical plants and locations containing explosives.

SAFETY ON THE ROAD

Vehicle drivers in motion are not permitted to use telephony services with the handheld device, except in the case of emergency. In some countries, using hand-free devices as an alternative is allowed.

SAFETY ABOUT RADIATION

This product should be operated in the suggested normal condition only to ensure the radiative performance and safety of the interference.

SAFETY FOR MEDICAL EQUIPMENTS

This product may cause malfunctions of medical equipments. In most hospital or medical centers, the use of this product is forbidden.

Attention

- There are no user serviceable parts inside this product. If this product appears to be broken, call a qualified service personnel or send this product to your original dealer. Do not attempt to disassemble or repair this product as it may result in electric shock or unrecoverable damage to the product itself.
- Keep this product out of reach of small children.
- Remove this product from your handheld device when not in use. Store this product in its protective case in a cool dry place.

- The antenna of this product is not removable. Do not try to detach the antenna from the product.
- Avoid touching the antenna while in use, otherwise it may cause adverse effect to signal reception.

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Statement according FCC part 15.21

Modifications not expressly approved by CMCS could void the user's authority to operate the equipment.

Statement according FCC part 15.105

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

RF exposure

Tests for SAR are conducted using standard operating positions specified by the FCC with the phone transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the phone while operation can be well below the maximum value. This is because the phone is designed to operate at multiple power levels so as to use only the power required to reach the network. In gen-

eral, the closer you are to a wireless base station antenna, the lower the power output.

Before a phone model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure. The tests are performed in positions and locations (e.g., at the ear and worn on the body) as required by the FCC for each model. (Body-worn measurements may differ among phone models, depending upon available accessories and FCC requirements). While there may be differences between the SAR levels of various phones and at various positions, they all meet the government requirement for safe exposure.

For body worn operation, to maintain compliance with FCC RF exposure guidelines, use only CMCS approved accessories. When carrying the phone while it is on, use the specific CMCS-supplied or approved carrying case, holster, or other body-worn accessory.

Use of non-CMCS-approved accessories may violate FCC RF exposure guidelines and should be avoided.

Health and Safety Information

EXPOSURE TO RADIO FREQUENCY (RF) SIGNALS

Your wireless phone is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on the safety standards previously set by both U.S. and international standards bodies:

* American National Standards Institute (ANSI) IEEE. C95.1-1992
* National Council on Radiation Protection and Measurement (NCRP). Report 86. 1986
* International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1996
* Ministry of Health (Canada), Safety Code 6. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The exposure standard for wireless mobile phones employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg *.

* In the U.S. and Canada, the SAR limit for mobile phones used by the public is 1.6 watts/kg (W/kg) averaged over one gram of tissue. The standard incorporates a substantial margin of safety to give additional protection for the public and to account for any variations in.

Statement for OEMs

Separate approval is required for operations with respect to 2.1093 as a portable transmitter.

This device is approved as a module to be installed in other devices. Each OEM must obtain their own Certification for each device containing this module. This includes measurements to satisfy RF exposure requirements.

Welcome

Thank you for purchasing the CMCS Tri-Band GSM/GPRS module. Combining extra-small profile with powerful features, the module provides the best design flexibility and outstanding performance to meet a variety of demands for integration into different devices. Plus, the rapid GPRS capability realizes faster and permanent data connection without cables.

Features

- Tri-band EGSM900/DCS1800/PCS1900
- Always on line: GPRS Class B, multi-slot Class 10
- Small form factor design
- Low power consumption
- SIM application tool kit
- Easy to integrate with a wide range of applications, such as mobile computers, handheld devices, remote control/monitoring systems, POS terminals, vending machines, and security systems

Overview

Package contents

Open the shipping package and check for the following items. If there is any item missing or damaged, please contact your dealer immediately.

- One CMCS Tri-Band GSM/GPRS module box
- One handset with connection cord
- Two RS232 cables

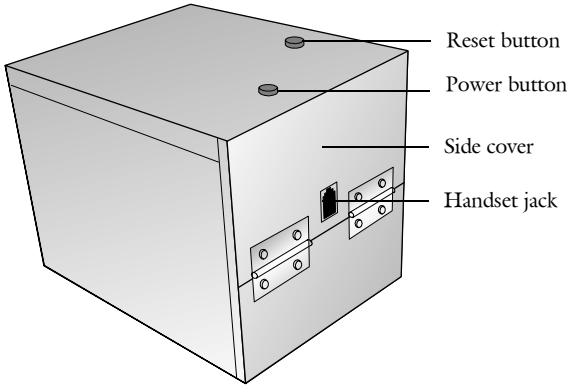
Minimum system requirements

- A PC running Windows 95/98/2000 or XP with at least an RS232 port
- A valid SIM card

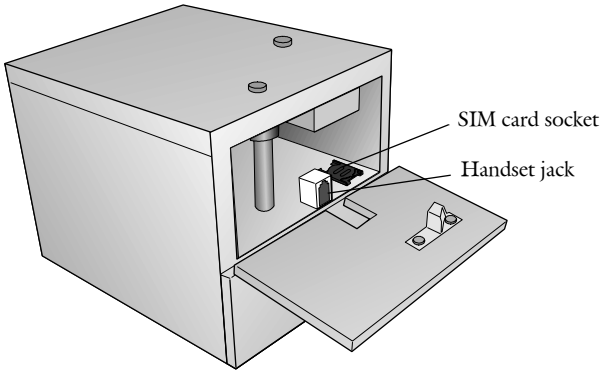
The Tri-Band GSM/GPRS module box

The module is packed in a box for easy installation. Please refer to the illustration below for parts of the module box and their names.

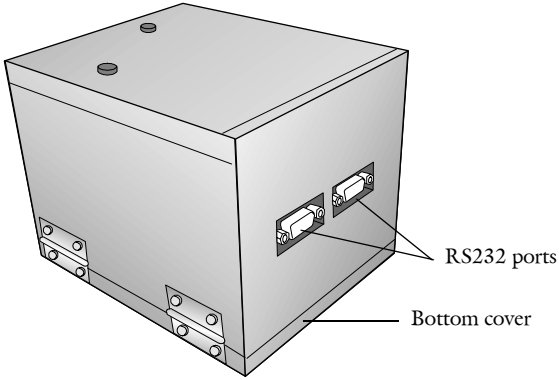
Front view



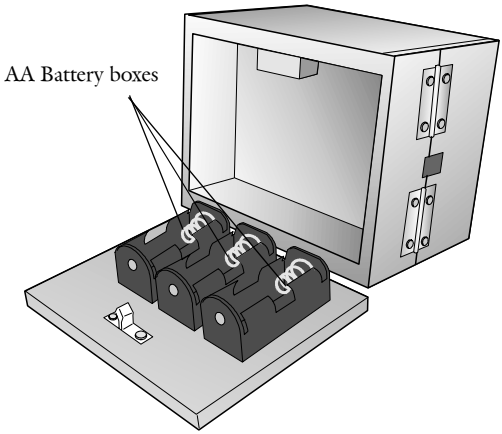
Front view with side cover open



Rear view



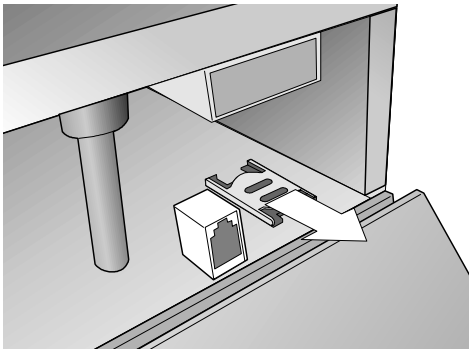
Bottom view with bottom cover open



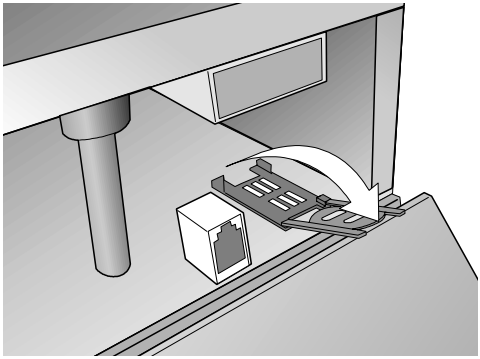
Installation and configuration

Installing SIM card

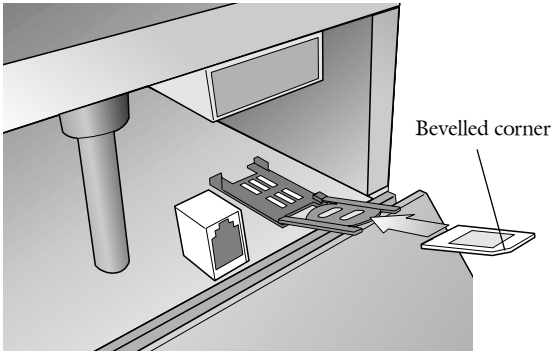
- Open the side cover and locate the SIM card socket.
- Open the SIM card socket by sliding the flip in the direction shown.



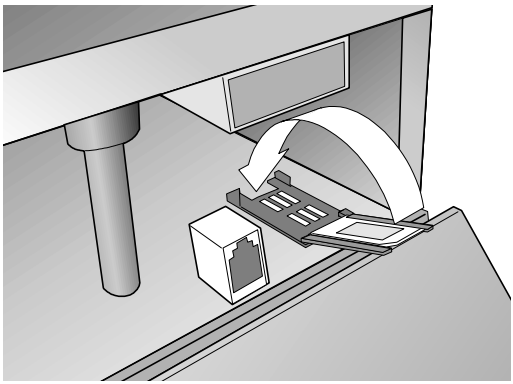
- Turn the flip in the direction shown below.



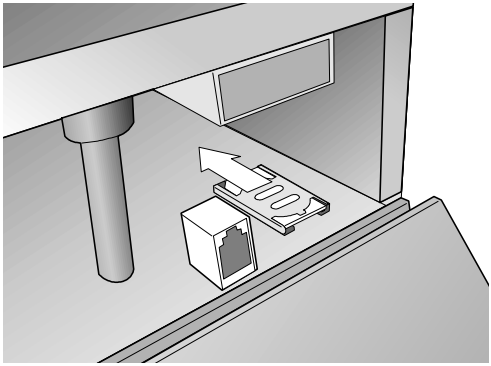
- Insert the SIM card into the flip with the metal contace facing upward. Pay attention to the direction of the bevelled corner.



- Turn the flip in the direction shown.



- Slide the flip in the direction shown.



- Close the side cover.

Installing batteries

- Open the bottom cover.
- Place 3 AA type batteries in the battery boxes.
- Close the bottom cover.

Making connections

- Connect the handset to the handset jack.
- Connect the RS232 cable to the RS232 port on the module box and your PC.

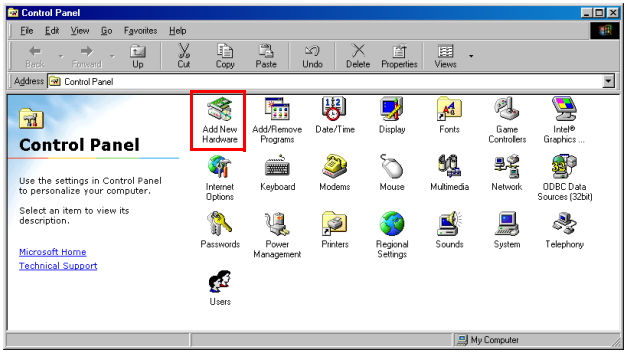
Configuring the connection with PC

Before configuring the connection:

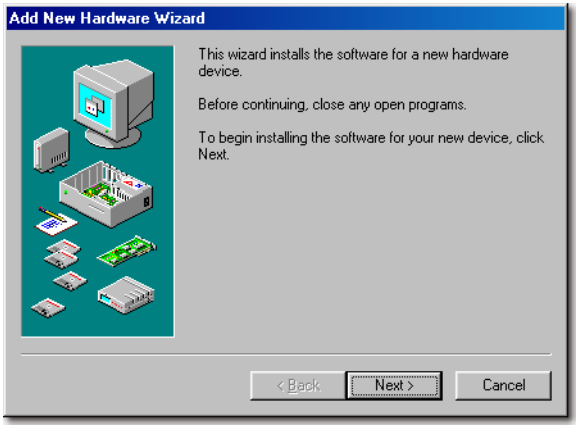
- Press the Power button on the module box to switch the power on.
- Power on the PC.
- Continue by following the steps below (illustrated according to the procedures in Windows 98. For other Windows operation systems, please follow similar steps).

1 Click **Start**, **Settings** and select **Control Panel**.

2 Double-click **Add New Hardware**.



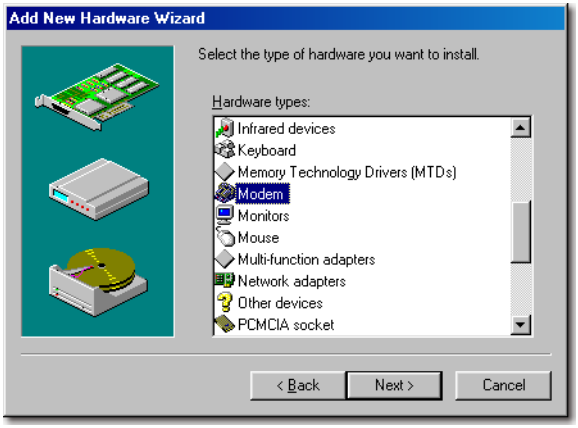
3 The **Add New Hardware Wizard** appears. Click **Next**.



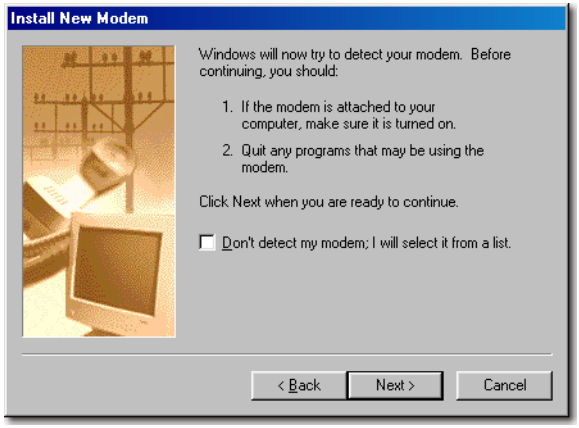
4 Click **Next**.

5 Click **No, I want to select the hardware from a list** and then **Next**.

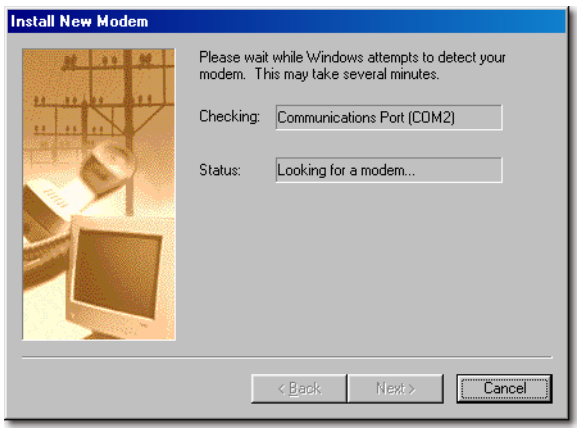
6 Click to select **Modem** and then click **Next**.



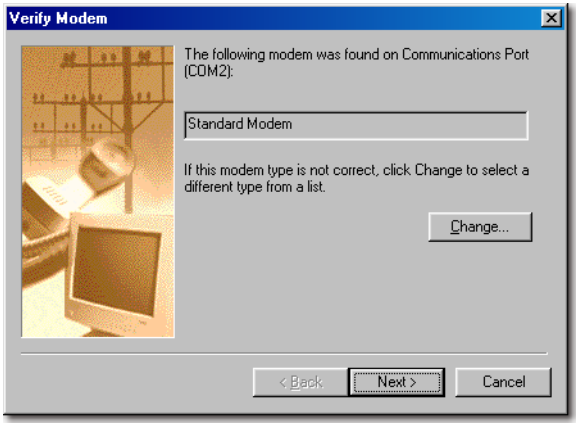
7 Click **Next**.



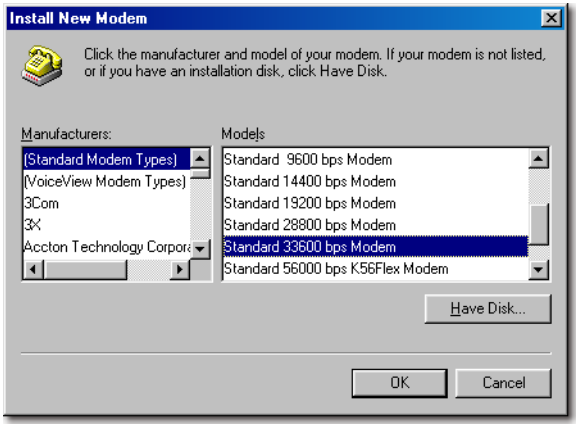
8 Windows will start detecting a modem automatically.



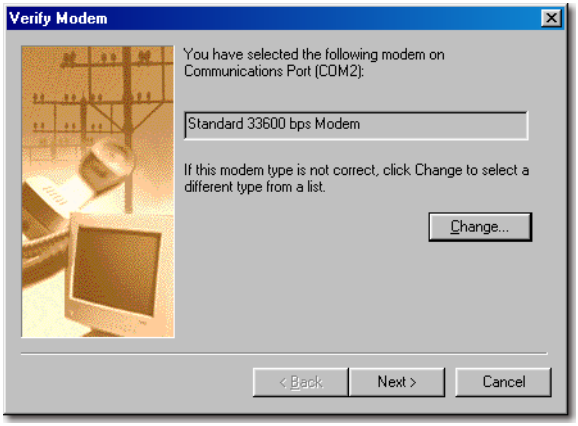
9 Click **Change...**



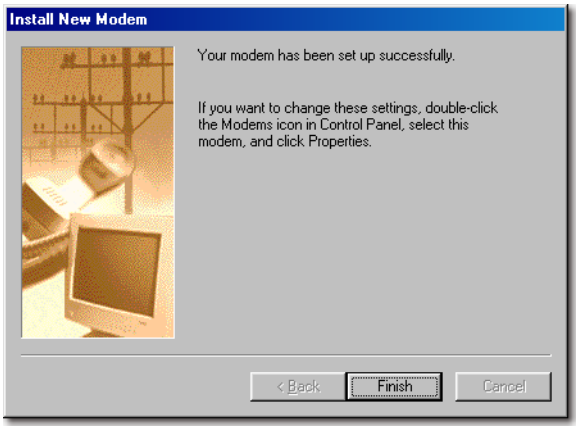
10 Click **(Standard Modem Types)** on the left and **Standard 33600 bps Modem** on the right. Click **OK**.



11 Click **Next**.



12 Click **Finish**

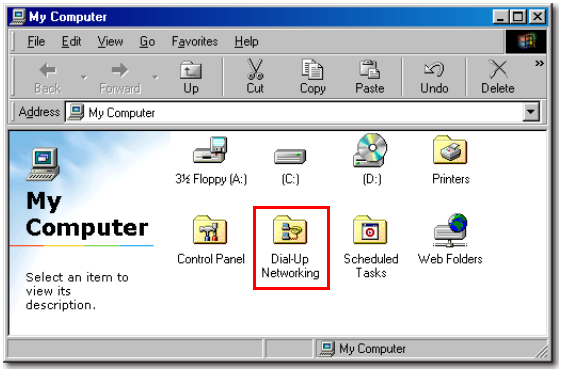


13

Double-click **My Computer**.

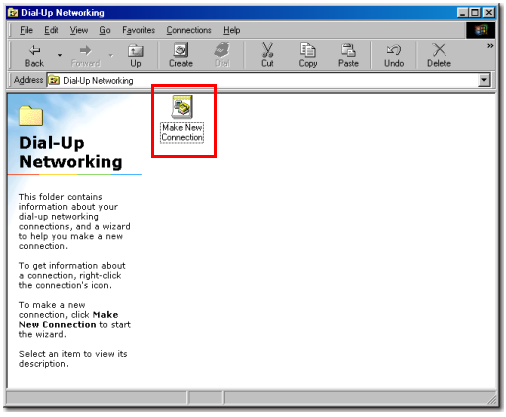
14

Double-click **Dial-Up Networking**.

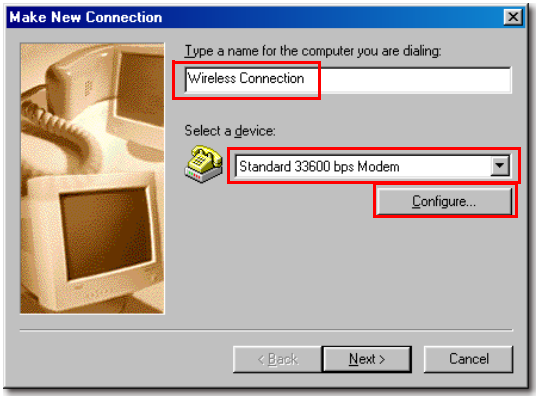


15

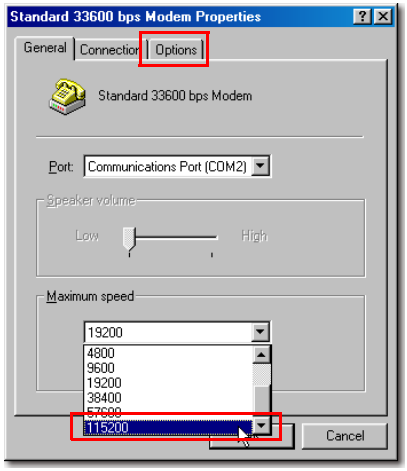
Double-click **Make New Connection**.



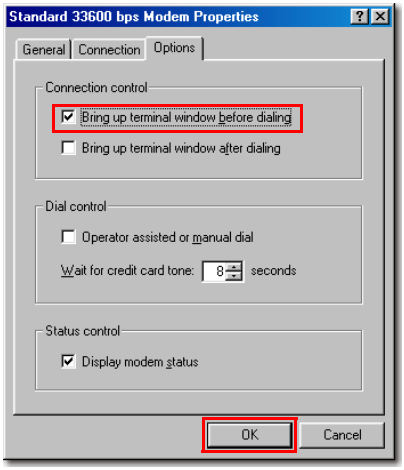
16 Enter a name for the new connection and select **Standard 33600 bps Modem** in the **Select a device drop-down** menu. Click **Configure...**



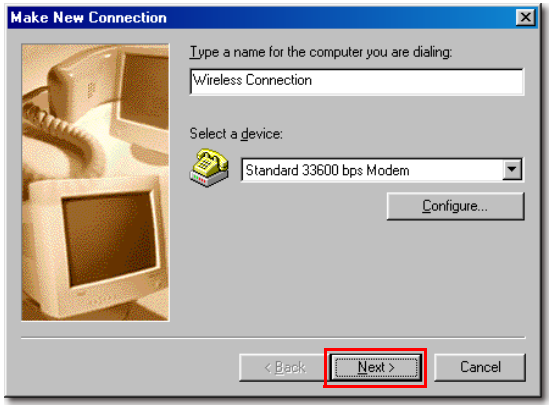
17 Select **115200** in the **Maximum speed** drop-down menu. Click the **Options** tab.



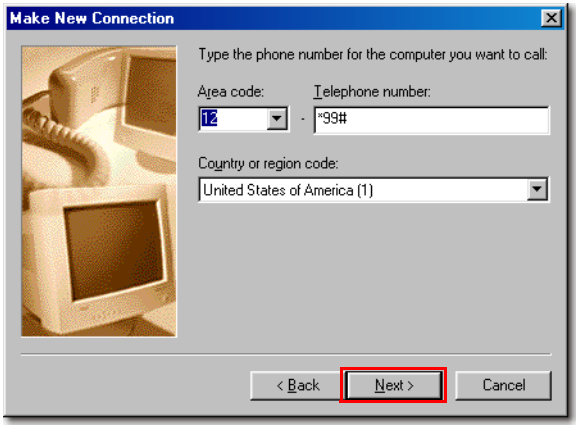
18 Click to check the **Bring up terminal window before dialing** checkbox. Click **OK**.



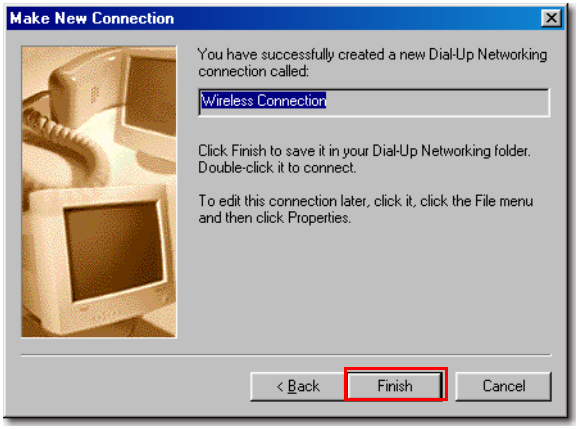
19 Click **Next**.



20 Enter the phone number of your connection (available from your operator) and click **Next**.



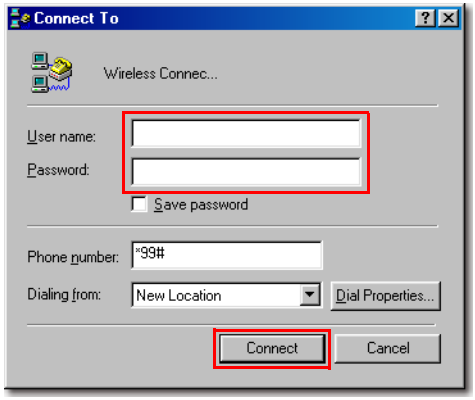
21 Click **Finish**. The setup of the connection between the module box and your PC is complete.



Using the module box

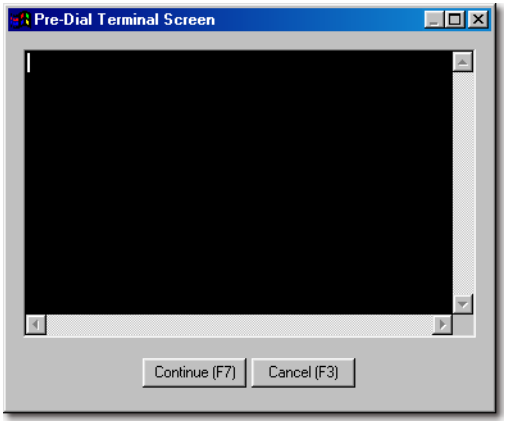
1

Double-click the icon of the new dial-up connection, and the following dialogue box appears. Enter your user name and password (available from your operator) and click **Connect**.

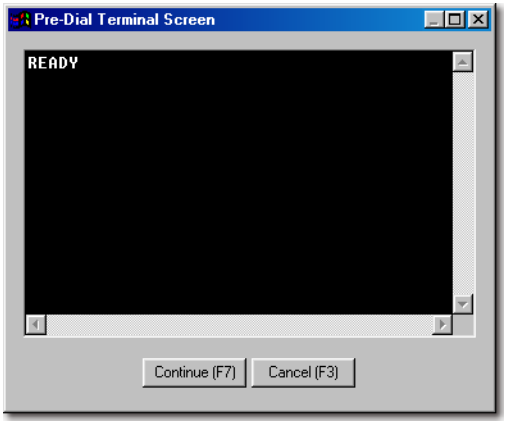


2

The **Pre-Dial Terminal Screen** will appear.



3 Press the Reset button on the module box. READY will appear on the Pre-Dial Terminal Screen in a few seconds.



4 Type AT Commands in the Pre-Dial Terminal Screen.

For example, to make a voice call to the number (01)2345678:

Type:

atd12345678;

and press **Enter**. The call will be initiated in a few seconds. Pick up the handset and you will hear the dialing in progress.

To end the call, type **ath** and press **Enter**.

For more information about using AT Commands and other voice/data functions, please refer to *CMCS AT Commands*.

Appendix: SAR Report

04/08/02

CMCS Triband GSM/GPRS Module

Generic Twin Phantom; Flat Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1567; ConvF(4.80,4.80,4.80); Crest factor: 8.0; Muscle 1880 MHz: σ = 1.49 mho/m ε_r = 55.8 ρ = 1.00 g/cm^3

Cube 5:5:7: SAR (1g): 0.0155 mW/g; SAR (10g): 0.0102 mW/g, (Worst-case extrapolation)

Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

Powerdrift -0.17 dB; Module Touching Phantom; Antenna Vertical

SAR_{1g} [mW/g]

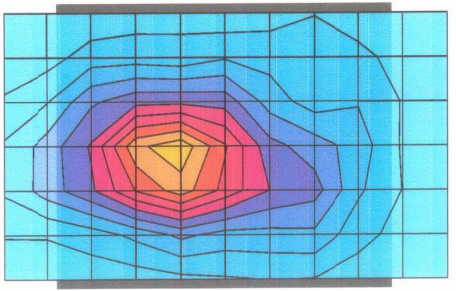
1.40E-2
1.26E-2
1.12E-2
9.80E-3
8.40E-3
7.00E-3
5.60E-3
4.20E-3
2.80E-3
1.40E-3

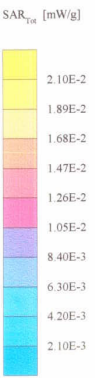
Intertek Testing Services

04/08/02

CMCS Triband GSM/ GPRS Module

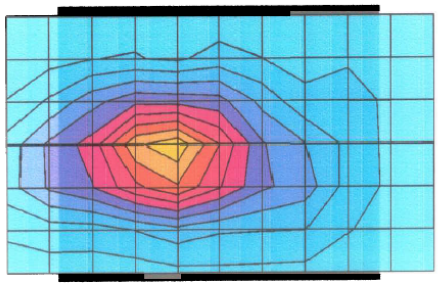
Generic Twin Phantom; Flat Section; Frequency: 1910 MHz
Probe: ET3DV6 - SN1576; ConvF(4.80,4.80,4.80); Crest factor: 8.0; Muscle 1910 MHz: σ = 1.52 mho/m ε_r = 54.0 ρ = 1.00 g/cm^3
Cube 5x5x7: SAR (1g): 0.0214 mW/g, SAR (10g): 0.0140 mW/g, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.12 dB; Module Touching Phantom; Antenna Horizantal

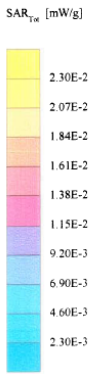




CMCS Triband GSM/ GPRS Module

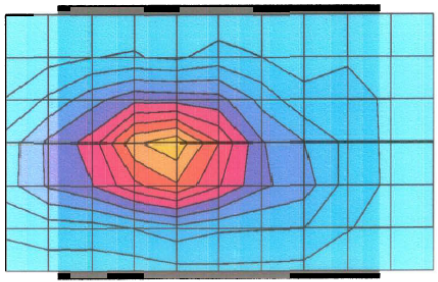
Generic Twin Phantom; Flat Section; Frequency: 1850 MHz
Probe: ET3DV6 - SN1576; ConvF(4.80,4.80,4.80); Crest factor: 8.0; Muscle 1850 MHz: σ = 1.45 mho/m ε_r = 54.2 ρ = 1.00 g/cm^3
Cube 5x5x7: SAR (1g): 0.0236 mW/g, SAR (10g): 0.0155 mW/g, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.11 dB; Module Touching Phantom, Antenna Horizantal

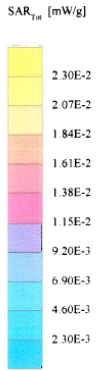




CMCS Triband GSM/ GPRS Module

Generic Twin Phantom; Flat Section; Frequency: 1850 MHz
Probe: ET3DV6 - SN1576; ConvF(4.80,4.80,4.80); Crest factor: 8.0; Muscle 1850 MHz: σ = 1.45 mho/m ε_r = 54.2 ρ = 1.00 g/cm³
Cube 5x5x7: SAR (1g): 0.0236 mW/g, SAR (10g): 0.0155 mW/g, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.11 dB, Module Touching Phantom; Antenna Horizantal





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Chi Mei Communication Systems, Inc.

11F, No. 39, Chung Hua Road Sec. 1
Taipei 100, Taiwan, R. O. C.
Tel: +886-2-2370-8699
Fax: +886-2-2370-7399