Quick Start Guide

GPRS Radio Setup

Below are the basic steps required to get a GPRS system connected to a service provider.

1 You will need to acquire the following from your service provider.

- Confirm that GPRS is available in your area
- Obtain a SIM card that has been programmed for Packet Switched Data (PSD/ GPRS) transmission
- Confirm you Access Point Name (APN) from your service provider
- Confirm your Personnel Identification Number (PIN). Some providers SIM's will not require this information. You will need to contact your provider to confirm if the SIM that you are using has a PIN number set up for it or not.

2 We will provide the following

- The International Mobile Equipment Identity (IMEI) on the side of the box and can be found via the CORE module in the 700 series hand held. You will need to provide this to you service provider so they can place this in their database of equipment.
- Your service provider may ask what radio module we are using in the 700 series hand held. We are using the Siemens MC45 Cellular Engine.

3 You will now need to install your SIM into your unit.

- On the mono units you will need to remove the IRDA lens on the side of the unit and insert the SIM following the instructions in the user manual.
- On the color units you will need to remove the top cover and insert the SIM in the Secure Digital card slot. See your users manual for information on the secure digital card slot.

4 At this point you are ready to check out the functionality of the system. You have four means to test this out. (I will cover each one below)

- Core will allow you to do a voice connection (CSV) or do a terminal application to do a quick interface with the radio. The SIM will have to be enabled for Circuit Switched Voice (CSV) to make a voice call. It would also have to be enabled for Circuit Switched Data (CSD) to make a data call
- The use of AT commands to see if you can interface with the radio unit to connect to the Internet.
- A freeware program called GRPSinit that will allow you do to make an Internet connection without understanding the AT command set. (See answer # in are knowledge base for information on this Freeware)
- A purchasable toolkit that has examples and code to speed up the integration of your application into the GPRS world.

Core Processes

The following steps will go over the core process and testing the system using this interface.

- Launch CORE via Start > Programs > Core
- Confirm that the WAN Radio appears in the Network Type in CORE.
- If WAN is not showing up then at the bottom of core you will find a Modules selection. Go into this selection and select the Choose Module. At this point you will need to Highlight the WAN Module and press the choose button. This will enable the WAN radio module for CORE.
- You should now be back at the CORE screen and should see the WAN radio as the network type.
- You will now want to set up AT inquires of the WAN module.
- On the CORE screen you should see a DETAILS tab. Select this and then select the TERMINAL APP box.
- This will then place you into a full screen MANUAL TERMINAL WINDOW that will allow you to send messages to the radio and see the response to these messages.

The following are the steps that are required to confirm that the WAN module is responding.

Note: after each AT command has been entered it is understood that a "return" is to be pressed unless otherwise stated)

1 We first want to make sure that we can talk with the radio.

- **Type in the following AT command:** AT
- **Response:** You should get an "OK" response back from the modem. Wait about 8 to 10 seconds before going on to step 2.

Note: If you do not receive the "OK" then exit out of the Manual Terminals Screen and back to General tab. If you still see the WAN radio as a selection then do a warm boot of the unit and go back to the top of the CORE process and repeat the steps to this point.

2 Since the radio has responded we now want to confirm that the radio is set up with a PIN number.
   - **Type in the following AT command:** AT+CPIN?
   - **Response:** If the response is "READY" then the unit is set up correctly
   - **Response:** If the response is anything else then move on to step 3.

3 We now need to set a PIN number in the unit.
   - **Type the following AT command:** AT+CPIN=(your pin number from the first section of this document)
   - **Response:** Once you have entered this and received a ready response go to step 2 of this process. Confirm that you get a "READY" at this step. If not then you have a possible issue with the radio module of the unit. Contact Intermec Support for assistance.

CORE will allow you to interface with the WAN device through the AT command interface. It will also allow you to make voice calls through its own phone window. You do not want CORE open if you are making a GPRS connection however. That must be accomplished through the connection manager by either making a manual connection or by using the GPRSInit program. (Both process are described below)

Manual AT Command Process

You may find that the CORE module is not working as expected and require further testing. OR you may feel better using a manual interface to check the set up of the radio connection. Below are the instructions on how to connect to the module using AT commands.

1 We will need to create a connection option in pocket pc to tell the system how to interface with the radio.
   - **Step 1:** Go to START > SETTINGS > CONNECTIONS (TAB) > CONNECTION
   - **Step 2:** Under the INTERNET SETTINGS select the MODIFY button
   - **Step 3:** In the CREATE A CONNECTIONS window select "NEW"
   - **Step 4:** Name the connection to something that you want to have: Example: WANGPRS
   - **Step 5:** Under the "SELECT A MODEM" select WANAA on Com4
   - **Step 6:** Under BAUD RATE select 115200 from the drop down menu
   - **Step 7:** Select the ADVANCE button and following the following steps
     - **Step 7a:** Confirm that the "ENTER DIALING COMMAND MANUALLY:" is the only box checked.

- **Step 7b:** Confirm under the TCP/IP tab that "USE SEVER ASSIGNED IP" is checked
- **Step 7c:** Confirm under the Name Server that "USE SERVER ASSIGNED ADDRESS" is checked
- **Step 7d:** Press the OK in the upper right corner and then NEXT on the MAKE NEW CONNECTION Screen
- **Step 7e:** Press the NEXT and FINISHED on the next two screen and then press OK to go back to the CONNECTIONS screen

2 We will now try to connect to the GPRS network and confirm that we have a connection.

- From the CONNECTIONS screen select the name of the connection set up in step one under the Internet connections selection.
- Once this is highlighted press the "CONNECT" button under this selection. You will come up with a NETWORK LOG ON screen. You should not need a user name, password, or domain name so leave this blank and press the OK.

Note: IF you do not want to see this screen in the future check the save current setting on this window

- At this point a connecting information box should pop up. Press the "HIDE" to close this window.

At this point we need to check to see if we have a connection with the radio.

1 We first want to make sure that we can talk with the radio.

- **Type in the following AT command:** AT
- **Response:** You should get an "OK" response back from the modem. Wait about 8 to 10 seconds before going on to step 2.

Note: If you do not receive the "OK" then exit out of the Manual Terminals Screen and back to General tab. If you still see the WAN radio as a selection then do a warm boot of the unit and go back to the top of the CORE process and repeat the steps to this point.

2 Since the radio has responded we now want to confirm that the radio is set up with a PIN number.

- **Type in the following AT command:** AT+CPIN?
- **Response:** If the response is "READY" then move on to step 4.
- **Response:** If the response is anything else then move on to step 3.

3 We now need to set a PIN number in the unit.
- **Type the following AT command:** AT+CPIN=(your pin number from the first section of this document)
- **Response:** Once you have entered this and received a ready response go to step 2 of this process. Confirm that you get a "READY" at this step. If not then you have a possible issue with the radio module of the unit. Contact Intermec Support for assistance.

4 Now we will need to connect to your network.
- **Type the following AT command:** AT+CGDCONT=1,"IP","APN"
- **Response:** Note: Enter the APN from the first section of this document but DO NOT remove the quotes from around this name. Example:"attsubnet" You should not see a response.

5 We now will confirm that the unit can connect to a GPRS system.
- **Type the following AT command:** AT+CGATT=1
- **Response:** If you are in a area that has GPRS coverage then it should respond with a OK. If you receive the OK response then move on to step 6. If not then contact you service provider and confirm the coverage area.

6 We will now attempt to make a connection with the network.
- **Type the following AT command:** ATD*99***1#
- **Response:** This command will DIAL into the network and if you obtain a successful connection it should respond with a CONNECT reply.

7 You have now connected with the service provider and can now press 'OK' in the upper right of the manual Dial Terminal Window and launch either a browser software package, Pocket Internet Explore, or launch another application.

Using GPRSinit

GPRSinit is a FREEWARE program that handles a lot of the connection for you. Once GPRSinit is loaded and executed you will come up with a menu page that has six main buttons and two status screens.

The first button that needs to be checked is the SET UP button.
- Under the SET UP button confirm that under the APN/Band tab you have entered your APN name in the GPRS Access Point Name section.
- The line should read: +cgdcont=1,"ip","APN name". APN Name needs to change to match the APN name that you found under step one of this document.

- Once you have entered the above information then you should be able to press the “MODEM ON” button and you should see the modem status screen report that it is:
  - Waiting for GPRS attach
  - Checking SIM card and PIN number
  - Checking modem responding
  - Waiting for modem to initialize
  - Opening COM port
  - Switch modem power on.
- If all this goes well then you should see the power status on the bottom of the display go to PWR and you should see signal strength.
- If you find that you have any issues and do not get to the PWR status then you will need to go into the setup button and check you connection settings by going into the “change connection settings” on this screen.
- You will need to check the set up and confirm that the same set setting found under Manual AT command are set under the GPRSint set up. Start at the section that 5 of the Manual AT command set up and follow through to step 7e.
- If you have confirmed that all the setting are set correctly then press the OK button until you get back to the main GPRSinit screen and attempt to use the Modem ON button again.
- If you find that still you are not able to connect then you will need to run either the Manual AT command or the CORE sections on this document to confirm that the radio is working as is present.
- If you are able to connect then you should be able to press the Connect button on the display and this should allow you to connect to the Internet.
- If you want to use another method to connect to the Internet but want to use the GPRSinit to configure and power up the modem then you can do the above steps but instead of pressing the connect button you can say Exit and then confirm that you wish to exit.
- This will leave the radio on but will exit you out of the GPRSinit tool and allow access to the com port from other programs.

WAN TOOL KIT

Everything that has been stated to this point are means to confirm that you have a connection using the GPRS connection in your 700 series handheld device. If you wish to integrate using the GPRS function into your application you have access to the Siemens command set via are knowledge central. This will give you access to ALL the commands that are supported by the GPRS radio used in are products. You may find that integrating this communications method into your application a considerable effort. In order to assist in the development of the GPRS usage with Intermec products we have developed a WAN tool kit that has examples and coding that will expedite the process. If you feel that you need to have a look at this tool kit contact you Intermec sales rep for a evaluation version of it.

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